ESTABLISHED IN 1872

PAPER TRADE JOURNAL

With Which Is Combined

PAPER

Vol. LXXXVII, No. 18 — Thursday, November 1, 1928

Cost Association Meets at Cleveland, Ohio

Breck Aspinwall, of the Oxford-Miami Paper Co., West Carrollton, Ohio, Is Elected To the Presidency of the Association for the Ensuing Year—Representative Men From All the Paper Making Centers Attend the Convention at the Hotel Statler and Listen To Addresses on Helpful and Timely Subjects

[FROM OUR SPECIAL REPRESENTATIVE]

CLEVELAND, Ohio, October 29, 1928.—Breck Aspinwall, cashier of the Oxford Miami Paper Company, West Carrollton, Ohio, was elected president of the Cost Association for 1929, in the closing session of the very successful convention held on Thursday and Friday, October 25 and 26, 1928, at the Hotel Statler, Cleveland, Ohio.

While Mr. Aspinwall has only been in the paper industry for a few years, he has during that time made a thorough study of cost work in the industry, as was disclosed by the splendid paper he presented at the convention, on "Standard Costs in a Book Paper Mill." His paper will appear later in the Cost Section of the PAPER TRADE JOURNAL.

Mr. Aspinwall said, "in practically every industry there will be found many supporters of standard costs, who believe that they are able through the use of standard costs, to obtain a clearer insight into their business, to have better control of the various operations, to enable them to meet competition with a clearer knowledge of what the profit or loss will be under given conditions, and to obtain financial reports that will present a more vivid picture of their operations and of what actually happens in their plants."

Mr. Aspinwall continued "that he felt he could safely say, that within his experience, the man who has gone back to the use of actual costs, after giving standard costs a fair practical trial, is the exception rather than the rule."

In Mr. Aspinwall's opinion, pulp and paper making seems to offer a particularly fertile field for standard costs, because as a rule, the variety of products is not very great.

In closing Mr. Aspinwall said, "There is no question but that most of the information and much of the analysis which a standard cost system yields *may* be obtained from other sources. I believe, however, that there is an enormous advantage to be gained by having this data tied into the accounts, so that the entire picture may be assembled and presented to the management clearly and concisely."

President Knott's Opening Address

President Knott in welcoming the members to the Twenty-first Semi-annual Convention, made a strong plea for closer cooperation with the work of the American Paper and Pulp Association and its affiliated associations. He urged the accountants to keep up-to-date in their methods and practices, pointing out that we are still in the transitory stage and constantly developing new ideas and better ways not only in our manufacturing methods, but in our cost methods.

He said, "We may pride ourselves upon the growth of our association, not only in the number of members, but in the services rendered to our members. We may indeed feel that these half year marks have in reality been yearly measures of our progress, Let us continue on our successful highway, until the Cost Association shall have firmly implanted itself in the entire pulp and paper industry. In 1925 Mr. John Hyde, then our president, sounded the first recorded call to a bigger and broader field of endeavor when he said, 'We should have a closer cooperation with the activities of the American Paper and Pulp Association and full cooperation between all the secretaries of the various organizations within the parent association.' It is the expanding of this idea into definite form that we have presented to you in the last issue of Pulp and Paper Profits in the so-called Cost Association Plan for Organization. I thoroughly believe that the consummation of this plan in its entirety will result in placing this association in a most enviable position among the trade organizations of this industry. Please allow me to recommend this to your especial attention prior to tomorrow's forenoon session, when the plan will be fully presented and acted upon.

"We are not the first association to undertake work of this nature and already some industries are reaping the benefit of their labors. To quote Commissioner A. F. Myers of the Federal Trade Commission, 'Trade associations can and do render a valuable service in the promotion of cost accounting work. This is a recognized legitimate function of trade associations and is contributing substantially to the prosperity and stability of the nation's business.' I do not need to recall the Maple Flooring and Cement Associations as notable examples of this work, as you all are probably familiar with these cases. In looking ahead I wonder if we all are content to sit in our chairs and let the systems we are now using be our only concern, or are we planning possible adaptations of modern cost engineering? I say engineering advisedly, as I feel the day of the cost accountant is rapidly passing and he is broadening into a cost engineer. Modern times are times of constant changes. We as cost men are not going to allow the newer things in our field to pass through our fingers without making a strong attempt to hold onto the particular items which will merit consideration from our executives. Therefore, I believe we should, in our conventions, take the time to listen to and obtain for speakers, men who while advancing these new ideas are willing to give us their time. We cannot afford to be super-critical and pronounce new theories as too radical for our particular use. Rather let us take the other side and through analysis try to work

in the new ideas, in order to remodel the old systems now in use and keep abreast of the times.

"I quote Mr. Harrington Emerson on this point, 'Standards are infinite and ever changing. The best practice of yesterday is the laughing stock of today.'

"Gentlemen, we are still in the transitory stage. Some of us have traveled from no costs, to job lot costs, average costs, standard costs, predetermined costs and now are still groping around for further simplified standard costs, which will result in the elimination of clerical effort and effect a closer tie-in between production, payroll and cost controls, still maintaining, however, absolute accuracy, if such is possible, in our final results. We had thought several times that we had reached the Mecca of cost control but with the constant tide of new ideas surging around us we have been brought face to face with further improvements resulting in additional reductions in overhead expense. I believe each change we make is constructing more sensitive and accurate costs. Personally, I must admit the Old Viking spirit must still remain in my veins, as I delight in embarking on a change in the method of cost finding employed, setting sail for a definite objective with only common sense and hard knocks as my compass and guide. The rocks may be plenty but I believe a deviation is safer than holding to the old course where sooner or later by over-confidence or the watching of too many details, we are too late when making a change to avoid the rocks.

"We take cognizance of obsolescence in determining our costs and in running our mills, therefore, the same theory ought to hold good for our cost systems. Why not scrap the old ideas as there's no junk value attached to them and in their place buy up to date office machinery, just as willingly as mill equipment. I am sure after close investigation we all will find something new that is suitable to our usage. This, men, I believe is the main object your executives have uppermost in their consideration when they allow you to attend conventions like ours.

"Someone will always have to figure the cost as it is even written in the Holy Writ, under the Gospel of St. Luke. 'For which of you intending to build a tower sitteth not down first and counteth the cost.'

"This shows that predetermined costs are not new and that we can further develop this old idea. In conclusion please allow me to once more express my appreciation of your will in electing me to the presidency of this association. Although representing the mill from the most Northeasterly point in the country amongst our membership, I assure you my best intentions have been with the association during the past year, although active participation has been limited.

"Uncle Sam has increased his revenue accordingly and Tom Burke has had to keep his stenographer overtime to catch up with the mail, but notwithstanding these minor trifles, I do appreciate the honor you conferred upon me."

Fixed Assets

A. W. Astley of the Chemical Paper Manufacturing Company, presented a fine paper on "Fixed Assets and the Plant Ledger." He mentioned the importance that business executives placed today on statistics, which will help them in understanding the relative position of their own businesses to other businesses in their industry, as well as the relative position of their own industry to other industries. He brought out the fact that in our industry the Fixed Assets make up a large percentage of the total assets and therefore deserve to have a Plant Ledger, which will make possible a proper accounting for this important asset.

Mr. Astley distributed forms showing the practice in use at the Chemical Paper Mfg. Company, and explained carefully the use to which each form is put.

At the close of his address he answered numerous questions covering the topic under discussion.

The only speaker who was unable to be present was H. G. Baldwin of the American Appraisal Company, who is ill with grippe. His place was taken by A. L. Etzius, and although as Mr. Etzius said he was "pinch-hitting," he made a fine presentation of the subject, and this presentation will shortly be printed in the Cost Section of the PAPER TRADE JOURNAL.

"Should Pulp Be Sold on an 'Air Dry' or 'Bone Dry' Basis?"

This subject was opened by A. M. Van Douser, assistant secretary and treasurer of the Marathon Paper Mills Company. Mr. Van Douser stated that in his opinion it would be better if pulp were sold on a "bone dry" instead of on an "air dry" basis. He cited a great waste of time in clerical effort without any appreciable gain, as being one of his reasons for holding this opinion. During the long discussion on this subject, it was stated that the Technical Association was heartily in favor of such a change, so it was finally voted to refer the matter to the new Joint Cost and Technical Committee, for further action.

Insurance Losses:

Reed B. Timmers of Albany, N. Y., gave a very interesting and instructive talk on this subject. He dealt specifically with one case of a large loss in connection with which he was recently called into consultation and illustrated how easy it was to overlook important items, when compiling "proof of claim of loss" unless every foreman and others connected with departments affected by fire were called into conference and reason explained as to what information was wanted, in order that insured might obtain full compensation for all losses sustained.

Mr. Timmers, when giving information as to how paper mills constantly overlook claim possibilities, created great surprise among those present, most of whom decided to give more attention to this phase of the subject in the future.

Relationship of "Safety Work" to Costs

Earl E. Grant, membership chairman of the Pulp and Paper Section of the National Safety Council, gave a short address following the banquet held on Thursday night. Mr. Grant has evidently studied his subject, stating among other things, that from 75 per cent to 98 per cent of all accidents are due to carelessness. He said that insurance compensation rates varied from 10 cents to 18 dollars per hundred dollars of pay-roll, while paper mills ranged from $1.10 to $1.75 per $100.00, these rates being further influenced by the individual mills' experience. He also stated that as far as direct costs of accidents were concerned, actual figures in one mill he knew of showed an "accident cost of 64 cents per ton of paper produced and that Department of Safety advised that the direct cost is only about 25 per cent of the total cost of accidents.

Statistics

Stanley Byron of the Hammermill Paper Company opened the morning session on Friday, by presenting an interesting paper on "Statistics as Applied to the Paper Industry." He emphasized the increasing importance of the part statistics are playing in guiding executives in their decisions relating to the various business problems and urged all accountants to cooperate in this work, and to present their data in a form which will be quickly understood by those for whom their reports are drawn up. His address will be printed in full in a later issue.

Operation Control

James A. Reilly of the American Writing Paper Company, Inc., was the next speaker. He explained the changes made by his company in compiling their cost data and distributed copies of different forms now being used by them. His presentation led to a long discussion and numerous questions were asked. This was one of the most interesting sessions of the meeting, proving the interest the accountants have in putting their cost data to the most practicable use.

The secretary-treasurer explained this plan in detail and after a lengthy discussion, it was proposed by Seth L. Bush of the Crocker-McElwain Company and seconded by A. M. Van Douser of the Marathon Paper Mills Company, that the Cost Association should resolve the plan was well designed and should be put into operation. This resolution was passed unanimously.

A paper of considerable importance was then presented by

C. M. Baker, Engineer of the American Paper and Pulp Association.

Mr. Baker has estimated that a possible saving of from $5,000,000 to $10,000,000 may be made by the industry, by a more careful use of their "white water," thus reducing their fiber losses. His estimate was based on data previously collected, through the cooperation of mills scattered throughout the country and would appear a most conservative one. This is a subject deserving of the closest investigation, and as a result of this talk undoubtedly a number of mills will make changes that should prove profitable to them.

Labor Turnover

The final address was given by M. F. Carpenter of the Dennison Manufacturing Company, who talked on "Some Dennison Institutions Affecting Labor Turnover." That these so-called institutions have been beneficial and profitable is borne out by the fact that the Dennison Company's turnover figures are much below the average for the industry. Mr. Carpenter quoted them as follows: 1922—23 per cent, 1923—22 per cent, 1924—18 per cent, 1925—27 per cent, 1926—25 per cent, 1927—19 per cent, and 1928 to date 22 per cent.

The average for the industry, as disclosed by figures collected by the Cost Association for 1927, was about 50 percent, so that the Dennison Company's average is considerably less than half the average.

Mr. Carpenter's address was well received and at its conclusion a hearty vote of thanks was passed to him, and all the other speakers who had so liberally contributed to the success of one of the best meetings held by the Cost Association.

The secretary-treasurer's report was then presented by Thomas J. Burke. Mr. Burke also presented a form of questionnaire designed to obtain an analysis of production costs semi-annually, from the association's members. After some discussion this was voted on favorably to the effect that copies should be distributed to all members for their comment and prompt return, which will be done in the near future. Mr. Burke specially complimented the officers of the Connecticut Valley, Wisconsin and Michigan Divisions on the excellent meetings which they had arranged during the past year. He emphasized the importance of these local meetings in providing means for keeping in close touch with accountants all over the country, and again asked for the assistance of the officers of these Local Divisions in obtaining new mill memberships, to assist in carrying on to the best advantage in the broader field of work now being covered by the association.

Mr. Burke also referred to the Depreciation and Obsolescence study now being made and asked all mills who have not replied to the circular letter sent out last June on this subject, to do so at the earliest opportunity. He emphasized the fact that this information was wanted for study only, and that no action of any kind was contemplated in connection with the plan designed by the Commissioner of Internal Revenue until such time as the industry had had a full opportunity to express itself regarding any report submitted as a result of the study to be made as soon as sufficient reliable data has been collected. This data is required from every pulp and paper mill in this country, Mr. Burke said, as promptly as possible.

He asked for better support from the mills and expressed the hope, eventually every mill, now a member of the American Paper and Pulp Association, would take under serious consideration the advisability of spending $115.00 a year in supporting the work the association is doing, which he said had a direct bearing on the "profitless prosperity" problem now confronting this, as well as many other industries.

Capital Paper Co. Increases Stock

INDIANAPOLIS, Ind., October 30, 1928.—Officials of the Capital Paper Company of Indianapolis have filed papers with the secretary of state of Indiana showing them to have increased their capital stock from $100,000 common to $100,000 common and $100,000 preferred. The company is one of the largest in Indiana.

Gillette Fibre Mills Reorganized

STILLWATER, N. Y., October 29, 1928.—Additional details of the reorganization of the Gillette Fibre Mills, Inc., now available show that there has been an increase in the capital stock as well as a change in some of the officers. The new officers of the company are Harold L. Gillette, president; Randall J. La Boueff, Jr., vice president; Walter J. Zapf, treasurer and general manager. Mr. Zapf will have full charge of production. He is an expert paper mill man and widely known in the industry. He was formerly connected with the Dunn Sulphite Paper Company, of Port Huron, Mich.

The capital stock of the company is entirely held by persons interested in the firm and no stock will be offered to the public. The stock mentions no par value, therefore no indication is given of the total capitalization of the company.

Officials of the Wood-Flong Company formerly interested in the Gillette Mills, have disposed of their stock holdings in the fiber company and in the future will in no way be connected with the conduct of the mills. The three mills, boiler house and warehouse, formerly comprising the Wood-Flong plant, are now under the control of the Gillette Fibre Mills and the plant is being reorganized along lines mapped out by expert plant engineers. While the product of the company has been insulating fiber board and fiber trunk board used in the manufacture of trunks and suitcases it is understood that plans call for the development of other lines as soon as the organization is sufficiently developed to take care of current orders.

In acquiring the Wood Flong plant the Gillette Fibre Mills come into possession of valuable water power rights on the Hudson River. The plant depends largely upon water power for operating purposes.

The Wood Flong Corporation, which formerly owned and occupied the plant, has taken over a large mill property at Hoosick Falls which is now undergoing enlargement and improvement.

Rainier Pulp Plans Public Stock Offering

A special meeting of the stockholders of the Rainier Pulp and Paper Company will be called soon to authorize a plan of recapitalization contemplating retirement of the present bonds, notes and preferred stock and public offering of additional common stock.

The Rainier Company was organized in 1925 to engage in the manufacture of sulphite pulp. It acquired approximately 16 acres of land at Shelton, Wash., fronting on tidewater. On this property it constructed a sulphite pulp mill, completed in 1927, with a daily capacity of 125 tons of unbleached sulphite or 115 tons of bleached sulphite. Its manufacturing plant includes the usual auxiliaries, such as wood pulp plant, warehouse, docks, etc. All buildings are of concrete. All equipment and machinery is of latest design. The company holds valuable contracts whereby it purchases electric energy and steam at low rates from adjacent sawmills, and whereby it is assured of a low cost wood supply ample for its requirements for approximately twenty years.

Paper Mill Employment

There was a slight increase in both employment and payrolls in the paper and pulp and paper box industries during the month of August as compared with July, according to the Bureau of Labor Statistics, Department of Labor, at Washington, D. C.

Reports were received by the Bureau from 209 paper and pulp mills, which gave their July employment at 56,472, increasing in August to 56,955, an increase of 0.9 per cent. The payrolls in these mills also increased from $1,467,922 in July to $1,512,872 in August, an increase of 3.1 per cent.

The Bureau also received reports from 184 paper box factories which gave their July employment at 18,774, increasing in August to 18,875, an increase of 0.5 per cent. The payrolls in these plants also increased from $415,439 in July to $422,427 in August, an increase of 1.7 per cent.

News Print Makers Offer Profit Sharing Plan

Price Bros. & Co. Present New Co-Operative Feature to U. S. Publishers — Agreement Proposed to Adjust Prices for Yearly Contracts At End of Six Months to Prevailing Quotations of Three Largest Producers—Rebate Offered for Five Year Contracts

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., October 29, 1928.—An extraordinary development in the news print situation has been precipitated by Price Brothers & Co., of Quebec, in offering United States publishers a "cost plus profit-sharing plan" to determine news print prices. Two alternatives are offered. The first is for yearly contracts, with an agreement to adjust prices at the end of six months to the prevailing price of the three largest producers. The second, for five-year contracts, offers to give the publishers a rebate of 25 per cent of any difference between the cost of paper and the contract market price, with the provision that when the contract price goes below Price Brothers' costs the news print company will absorb 75 per cent of the loss. A guarantee will be given that the costs will not exceed $56 per ton, made up of $42.50 per ton for mill cost and $13.50 for overhead. If costs are lower the publishers will get the full benefit. The company's letter explaining these offers states:

"For the first time as an independent news print unit, and without any connections other than that of Price Brothers Sales Corporation, Price Brothers & Co., Ltd., are in a position to adopt an independent sales policy.

"Their mills are all of modern construction and accessible to a plentiful supply of raw material, which together with their own water power developments and a valuable long-term power contract, enables them to offer over a long period a unique merchandising policy.

"Their desire is to present to the publishers something that in its apparent cooperative feature will appeal to them to such an extent that, with all their connections made, they may continue indefinitely to supply a satisfied clientele.

"To enable them to achieve this end they have decided to offer a cost plus profit sharing plan, which, in the attached document, is designated as Plan 'B.'

"Price Brothers & Co. are extremely well situated to demonstrate the benefits of genuine cooperation and feel that those publishers who decide to avail themselves of this, will undoubtedly benefit from it."

Abitibi Starts Another Machine

Immediately upon the heels of the announcement by Price Brothers & Co., came an announcement from the Abitibi Power and Paper Company, Ltd., as follows: "The Abitibi Power and Paper Company, Ltd., have started up one additional news print machine in their mill at Sault Ste. Marie, Ont., and two additional news print machines in their mill at Espanola, Ont. This is to take care of additional orders they have covering the balance of the year."

These two announcements have startled the news print industry here. They are taken to mean that a war to a finish has been declared between the large news print producers who have been acting in consort and the independent producers who have been acting alone. The machines which have been put back into operation by the Abitibi company have been shut down for some time in conjunction with the effort of some Canadian producers to limit the output in order to prevent price-cutting competition. Meanwhile some of the smaller independent companies have been securing orders at cut prices and running their mills at full capacity. Such a situation, of course, could not last. All efforts at a joint and intelligent restriction of output have been shipwrecked because no agreement could be reached for the distribution of orders. Now the war is on, and no one is hardy enough to predict what the price of news print will be. One prediction, however, is generally believed, namely that a few days will see a cut of at least $5 per ton in quotations. In fact there are already reports of contracts at as low as $50 per ton ex-mill. Everything points to the situation, from the point of view of the producers, becoming worse before it gets better.

New Pulpwood Carrier

John Reid, marine engineer of Montreal and London, has announced that he has orders for an improved type of vessel for pulpwood carrying, in which there will only be two hatches, each 60 feet long. The whole of the under deck cargo space is thereby opened up fore and aft, and across the ship, to the action of the loading and discharging equipment. Mr. Reid has also invented a mechanical wood stacker, or stowing machine, now being tested. If successful this will eliminate all man-handling of the logs in the hold or of deck loads during handling operations. It is estimated that a saving of time, equal to one day per load carried, will be effected by the new vessel and its special equipment.

It is planned to place several of these new canal types in service early next season, when it is expected that their operation will be watched with interest by all pulpwood shippers.

Bathurst Extensions

The Bathurst Power and Paper Company has adjusted its differences with the town of Bathurst in regard to taxation, and the way is now open for completing extensions to the company's plant. The new equipment is already at the plant, but the installation of the new machine with a capacity of 75 tons daily had been delayed pending the outcome of litigation between the municipality and the company touching the assessed valuation of the plant.

Fundy Tide Power Plan

The Canadian Dexter P. Cooper Company has deposited with the various government authorities plans and specifications for the proposed plant to harness the tides of the Bay of Fundy for the production of hydro-electric power. The site chosen for the plant is at Passamaquoddy Bay, at Letite, N. B.

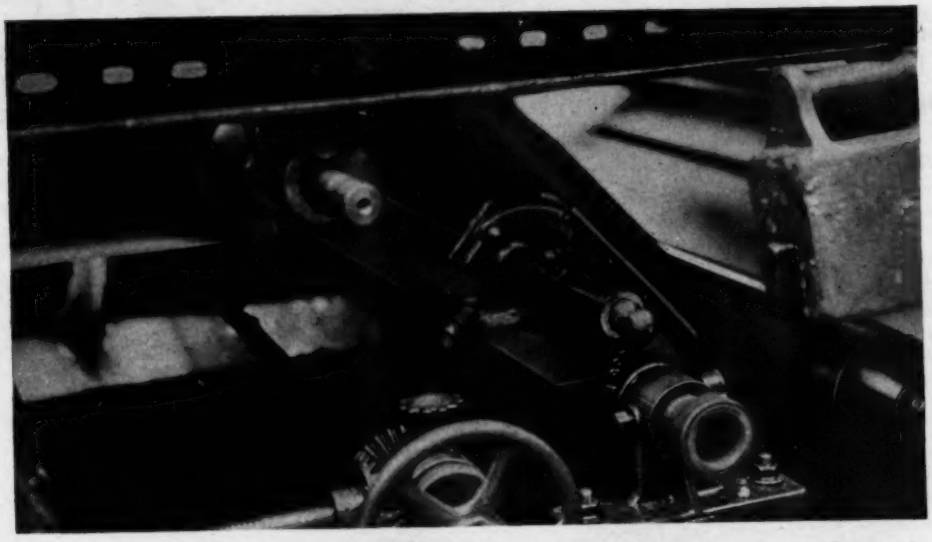
The projected dam is to be constructed so as to supply "certain islands in Letite Passage, Little Letite Passage and Doyle Passage to Deer Island and from Deer Island to the international boundary between Canada and the United States."

After the expiration of one month from the date of publication of the announcement, the company will apply to the Minister of Public Works for approval of the site and plans and for permission to construct a dam, locks and gates to carry on the development of power.

Strathmore May Buy B. D. Rising Mills

HOLYOKE, Mass., October 29, 1928.—Stockholders of the B. D. Rising Paper Company of Housatonic will hold a meeting November 2 to consider an offer by the Strathmore Paper Company of West Springfield and Woronoco to buy their property. It is understood in paper mill circles that the Strathmore Company has been considering the purchase of the Rising Mills for some months and that recently a definite offer has been made for the property.

The management of the Rising mills has recommended to the stockholders the sale of the property. The Rising Company is capitalized at $966,000 all common stock. About 300 persons are employed. The mills, sometimes known as the "twin mills" were built in the '70's by Henry D. Cone but not completed and stood idle for some years before being bought by the Rising people, who took over the property in 1899 and began the manufacture of high grade writing papers.



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Fox River Valley Paper Industry Happenings

Plant of Nicolet Paper Co., at DePere, Wis., Slightly Damaged by Fire—H. G. Knutson, of Wisconsin Industrial Commission, Addresses Students of Menasha Safety School—Places on Foremen Most of Responsibility for Accident Prevention—Praises First Aid Service

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., October 29, 1928.—Operations were interrupted for a short time last week at the Nicolet Paper Company, DePere, Wis., by a mill fire which caused loss estimated at $5,000. An overheated fan in the ventilators of the calender room set the framework encasing it afire about 5:45 in the morning. The flames swept quickly to a cupola and destroyed it entirely. Liberal use of water by the mill and city fire departments prevented the fire from spreading to the adjoining buildings.

In addition to the damaged cupola and roof, the loss included about fifty rolls of glassine paper which were still in the calender room where they had been finished recently. They were spoiled by the water. Paper machines were not damaged at all.

Operations were resumed within twenty-four hours and repairs were to be made immediately, according to H. C. Hanke, general manager.

Consolidated Bonds Called for Payment

Bonds amounting to $30,000 have been called for payment on November 1, 1928, by the Consolidated Water Power and Paper Company. These are part of a first mortgage 5½ per cent issue and will be redeemed out of a sinking fund which it was agreed in the mortgage deed the company would create. The bonds were chosen by lot and are callable at a premium of three per cent.

Success of Safety Campaign

There were 26,000 lost time accidents in Wisconsin last year and their cost to employers and insurance carriers was $4,750,000. These were among the facts given by R. G. Knutson, of the Wisconsin Industrial Commission in an address on "The Success of Safety," at the safety school conducted by paper mills and others at Menasha, Wis. The number was reduced in 1927 by 1,400, showing that safety efforts and practice have paid, he said. Stress was placed on the need of first aid service in every plant and he placed on foremen considerable of the responsibility for accident prevention.

Japanese Experts Inspect Consolidated Mills

Itsuki Nishi, of Tokio, Japan, paid a visit last week to the mills of the Consolidated Water Power and Paper Company, of Wisconsin Rapids, Wis. He is manager of the Jujo mill of the Oji Paper Manufacturing Company, of Tokio. The visitor was accompanied by Takensuke Sugihara, of Mitsui & Co., New York, and C. T. Ramsdon, of the Beloit Iron Works. These men were inspecting machinery in operation to determine whether any of the equipment could be adapted to paper making in Japan.

Fox River Higher Than Usual

Because of recent rains, paper mills in the state are having an over supply of water at the dams, and most of the gates have been opened wide to prevent flooding. The Fox river is twelve inches higher than usual at this time of the year, and the Wisconsin river also has exceeded its customary height by considerable. No damage of any consequence has been reported thus far.

Measures Against Forest Fires

Wisconsin is fully organized this year to cope with the forest fires that in the past have made such serious inroads on the pulp wood and general timber supply. The Wisconsin Conservation Commission has divided the timber areas into eleven fire protection districts, with wardens and a fire fighting crew in charge of each. Twenty-one lookout towers ranging in height from 62 to 86 feet have been placed on hilltops in the various districts so the forests can be seen for miles. Telephone lines have been strung through many of the districts for quick communication between wardens. New trucks have been provided for quick transportation of fire fighters and equipment. The state has twelve new pumps and 12,000 feet of hose for use where a water supply is available and can be used to advantage.

Five new ranger stations have been built this summer at Hayward, White Lake, Conover, Spooner and Tomah. Another important purchase is 750 five gallon fire extinguishers which can be carried on the backs of men in coping with smaller fires.

Aside from these features, the commission has placed signs everywhere warning tourists, campers, and sportsmen against carelessness. So far this year the loss from forest fires has been far below the usual record.

Oliver M. Thompson Weds

Announcement is made of the marriage of Oliver M. Thompson, and Miss G. Rigmor Jersild, both of Neenah, Wis. The wedding took place at the famous "Little Brown Church" at Nashua, Iowa, September 10, 1928. Mr. Thompson is a partner with H. S. Burstein in the Badger Paper Company.

Better Demand in Indianapolis

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., October 29, 1928.—More and more life is seen in the paper business here. The beginning of October saw the start of activity and it has kept up during practically all of the month. Business this month will be larger than it was during the same month last year. Leading members of the trade here seem to be more optimistic than they have been for some time. The price ranges on virtually all lines seems stationary and there is little fluctuation.

The last two or three weeks has seen a distinct improvement in the demand for wrapping and fine papers. In the wrapping paper field particularly has the increase been noticed. Business in the retail establishments has picked up materially with the coming of cooler weather. Business is going on as usual and the trade seems of the opinion that whoever is elected will make little change in the present economic situation.

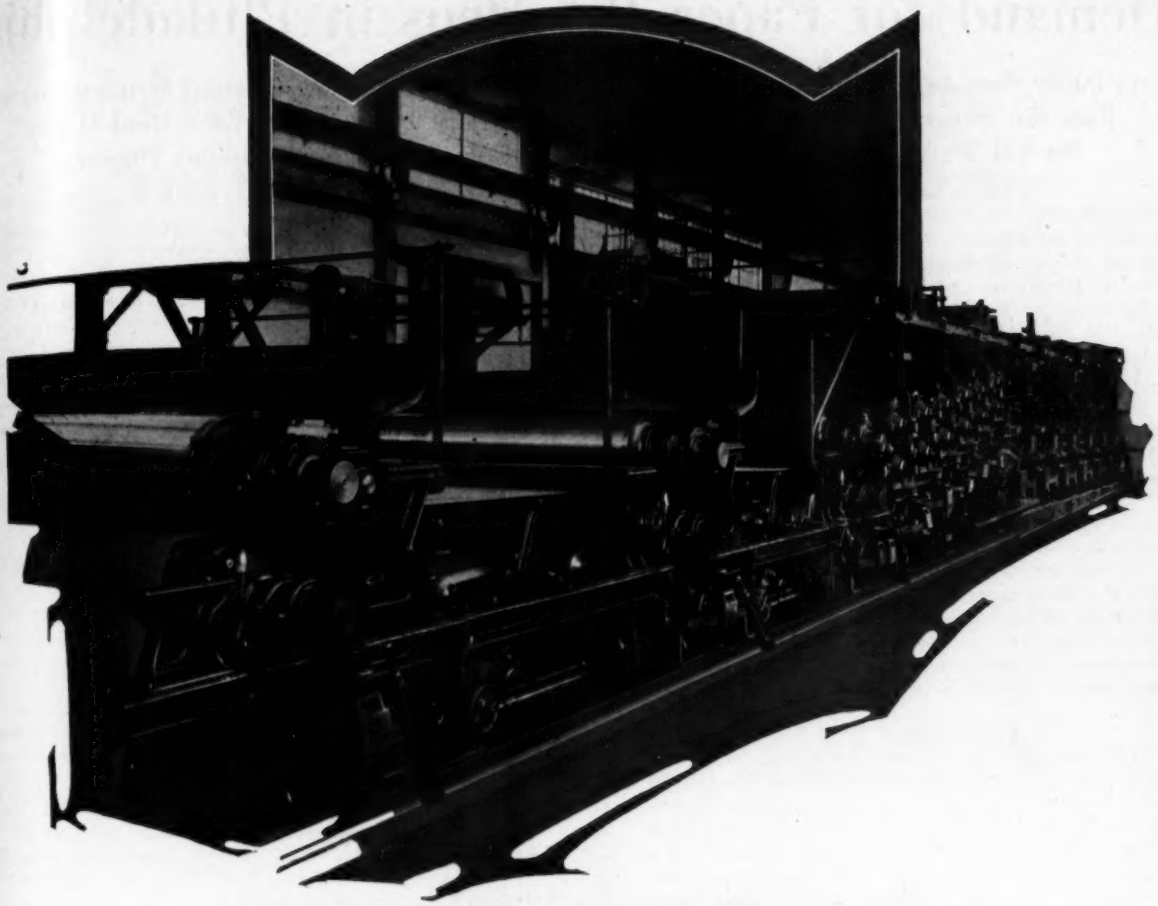
The paper stock situation here is improved insofar as price paid is concerned. Heavy stocks in the large plants here have become much lighter with increased activity at the mills and collections are light, making for higher price offerings.

The building paper demand is slumping somewhat. The year has been average, but little business is expected from now until spring. Demand for better grade papers from the printing industry is improving. Most of the local plants report increasing business and are buying accordingly.

J. W. Toole Celebrates 76th Birthday

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., October 29, 1928.—James W. Toole, for many years general superintendent of the fine paper mills of the American Writing Paper Company, celebrated his 76th birthday at his rooms in the Hotel Nonotuck, Monday last. He had been in failing health for some years and several months ago was in critical condition but has since recovered sufficiently to be out again. He retired in 1916. Mr. Toole was a warm personal friend of the late Senator W. Murray Crane and active in the Republican party here. He came to Holyoke from Dalton over 45 years ago to take charge of what is now the No. 1 Riverside Division of the American Writing Paper Company.



Greater Tonnage Without Sacrificing Quality

MAINTAIN quality at high speed with a modern Downingtown Board Machine.

The illustration shows the Main Press Part of one of the latest Downingtown Board Machines. The main bearings are self aligning and water cooled, while the top rolls are easily raised by ratchets.

High speed production is assured even on high test board, while ease of operation, low power requirements, freedom from breakdowns and long service life are constant factors in every Downingtown Machine whether Cylinder or Fourdrinier. Get our bid.

Our Products Meet Our Promises

DOWNINGTOWN Manufacturing Company Downingtown, Pa., U. S. A.

CAN. REP. FOR KILBERRY SUCTION ROLLS: CHAS. WALMSLEY & CO., CANADA LTD., MONTREAL, QUE.

Demand for Paper Broadens in Philadelphia

Fine Paper Section Shows Steady Improvement and Coarse Paper Division Assumes Normal Pace For Season—Converting Branches Exceptionally Active With Orders Booked For Several Weeks Ahead—Bag Manufacturers Enjoying Share of Holiday Business

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., October 29, 1928.—With a steadier tone to the general paper market, the local industry is broadening into the seasonal activity which customarily marks this advance holiday period of preparation. While the fine paper branch continues to swing slowly into line, the wrapping paper section is assuming its normal pace and in reports from some of the larger concerns is ahead of last year at the same period. Prices are steadier.

As the needs of Yuletide are anticipated, the converting branches of the trade are enjoying the normal advance purchases which appear with late October or early November days. That the coming holiday season orders are to be larger than the corresponding period of last year is a foregone conclusion as converters of bags, glassine and grease proof products and allied lines are already well sold up on production with enough advance buying to take care of several weeks to come.

This year the converters are besieged with demands for colorful and striking patterns in their designs for coverings for the gift giving season. Bag manufacturers who feature fancy lines for the confectionery, food and holiday wrappings of various merchandise are vieing with the wall paper manufacturers for colorfulness in printed designs.

Paper Trade Associates Meet

Combining a social session with business discussion around the festive board, sixty members of the National Paper Trade Association and the Philadelphia dealers met for the purpose of threshing out the needs for closer cooperation at a banquet held last Friday at the Benjamin Franklin Hotel. The meeting was arranged as part of the program of the International Direct Mail Advertisers Association Convention.

The meeting was placed under a committee, of which President Norbert A. Considine, of the Paper House of Pennsylvania, was chairman. President Simon Walter, of the Philadelphia Paper Trade Association, presided and introduced the various executives of the national body and other out of town mill men among the speakers. In his address President Walter remarked that if the association did nothing more than what is being accomplished in the cost accounting proposition, members could profit if only they would heed facts intelligently as they are presented by the cost accounting system worked out under the national organization. He urged hearty cooperation of all, stressing the needs for making the organization as near 100 per cent membership as possible.

Chairman Considine made a stirring plea to the members to take advantage of opportunities to improve conditions as offered by the association activities, calling attention to the somewhat chaotic and unsatisfactory trade at this time and the necessity for using the association to better these conditions.

Leon Beck, of the Charles Beck Paper Company, delegate to the National Convention recently held in Chicago, reviewed the work of the convention and its program, giving details of many of the factors which were briefly presented by President Walter in opening remarks.

Others who represented the National Association and talked on its activities were Kit Warner, vice president of the organization; Mr. Adams, treasurer; Frank Floyd, national executive secretary, and Assistant Secretary Chamberlain. Permanent Secretary Slote, of the New York association, talked on work of his organization. Others who were present were Messrs. Pomerence, New York; Steadman, New York; Berkowitz, Central Paper Company, New York; H. C. Whitaker, Baxter Paper Company, Baltimore; Bond, Bond Paper Company, Baltimore; W. H. Price, Barton, Derr and Kock, Baltimore; Constantine, Andrews Paper Company, York, Pa.; Keffer, Johnson Paper Company, Harrisburg, Pa.; Bishop, Harrisburg, Pa.; Van Read, Reade Paper Company, Reading, Pa.; Megargee, Megargee Paper Company, Scranton, Pa.; and the large group of mills men at the convention.

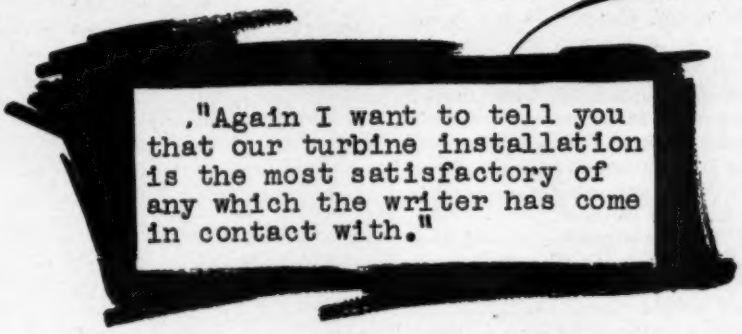
Curtiss & Bros. Retire From Distribution Field

Curtis & Bros., formerly located at Fifth and Ludlow streets, have announced the retirement of the firm from the distribution field after placing the Philadelphia representation of its lines in the hands of A. Hartung & Co., 506-512 Race street. The local distribution house of the manufacturers has been established for 25 years and was the only one devoted to the distributive branch of the Curtis mills, located at Newark, Del. The Hartung Company will be exclusive selling agents for the Philadelphia territory. With the retirement of the manufacturers from the distribution of its lines the officers who made their headquarters at the Quaker City headquarters will occupy new offices in Room 960, Public Ledger Building. These offices will be executive and sales headquarters of the mills and here will be located President Charles M. Levis and Vice President and Sales Manager Irwin F. Megargee. The Curtis mills have been in operation since 1848 and manufacture a line of standard printing papers. The Hartung company will carry in its warehouses a complete line of the Curtis products.

Wholesale Paper Merchants Hold Outing

Associates of the wholesale paper distribution concerns who are linked with the membership of the first organization of its kind in the industry, the Wholesale Paper Merchants Association of Philadelphia, met last Friday in the wide open spaces of the Roxborough Country Club, in the annual outing and fellowship of sporting events enjoyed in the numerous diversions of the program. Journeying to the Roxborough Country Club in the morning hours the thirty members who represent the mills and wholesale concerns spent the day in golf tournaments, quoit championship contests, novelty races and stunt sports and then joined around the dining table for a seasonable banquet at noon time. In the golf tournament the low net score prize was won by E. L. Richards, of the Philadelphia branch of the Buffalo Envelope Company. There was a tie among the winners of the quoit championship contest, with the newly elected president, George K. Hooper, of the Hooper Paper and Twine Company, winning in the final play of the elimination counts, with a score of 21 to 11 and receiving the award of a sweater. There were ten quoit exponents in the match playing in two brackets, the other winner being James Andrews, of the Schuylkill Paper Company, who was tied with the president of the organization. Frederic I. Brower, representative of the Wortendyke Manufacturing Company, shared with Mr. Richards in the honors of the golf contest, winning the second prize. T. C. Mitchell, vice president of the Federal Container Corporation, won the putting contest, while John G. Bierle, Jr., of the Forest Products Company, was awarded the laurel for the balloon race. Fred A. Sulli, of the Forest Products Company, made a moving picture of the events of the day and this reel will be shown at the coming meeting to be held next Friday. Previous to the luncheon hour a brief business session was held for the purpose of admitting to membership H. G. Kleinfelder, Jr., of the Philadelphia offices of the Grady-Travers Company, rope and twine manufacturers, New York, recently opening the Quaker City offices at 216 South 4th street.

The manager of a Large Southern Mill *writes this*


"Again I want to tell you that our turbine installation is the most satisfactory of any which the writer has come in contact with."

about TERRY PAPER MACHINE DRIVES

—About two 350 HP variable speed units which are installed in one of the largest and most modern kraft mills in the country.

The turbines are designed to operate with steam at 180 lbs. pressure with 40° superheat, and exhaust against 30 lbs. back pressure. The speed of the units is easily varied throughout an 8 to 1 range. The exhaust steam which is used for drying is uncontaminated by oil.

Complete details on a Terry Paper Machine Drive to meet your many requirements will gladly be furnished. A request on your letterhead will bring you a description of this modern means of operating paper machines. Ask for bulletin S-77.

The Terry Steam Turbine Company

TERRY SQUARE, HARTFORD, CT.
OFFICES IN PRINCIPAL CITIES
Steam Turbines + Gears + Shaft Couplings

T-1020

There is to be conducted this year under President Hooper, a special drive for making the Philadelphia representation of wholesale members in the association a 100 per cent enrollment of the local industry. There are now 90 per cent of the local mill representatives and wholesalers enrolled, these members having been added since the organization of the body three years ago.

Wilcox, Walter, Furlong Co. Sole Cantine Distributors

With the retirement of Curtis & Bros. from the retail distribution in the local paper industry, the Wilcox, Walter, Furlong Company becomes sole distributors of the Cantine coated papers made by the Martin Cantine Company, of Saugerties, N. Y. An announcement was sent out to the paper trade during the past week notifying the dealers of the change in distribution, the mills making the fact known that the Wilcox, Walter, Furlong Company have been appointed exclusive agents in this territory.

Cantine Line At Direct Mail Convention

The various grades of coated papers made by the Martin Cantine Company were exhibited at the recent Direct Mail Convention in the booth of the Wilcox, Walter, Furlong Company along with the newly added papers which the firm has taken on as Quaker City distributors. Besides the larger assortment of the Cantine papers there were shown in this booth the latest to be added to products of W. C. Hamilton & Sons, manufacturers of fine papers, at Miquon, near Philadelphia. These are the Hamilton bond, a watermarked bond of good quality and at popular prices. Another addition to the line of papers stocked by the firm which was shown is the Capri coated tint, a beautiful coated sheet in Italian blue, green and ivory, which gives a clear illustration where such is used in advertising matter or catalog work either in black and white or color work, and made by the Hampden Glazed Paper and Card Company, of Holyoke, Mass. "Twenty Good Letters" was the caption under which the Oxford Miami Paper Company, of West Carrollton, Ohio, displayed the line of Triton bonds, made in its mills and featured by the local distributors, the Wilcox, Walter, Furlong Company. This direct mail bond was one of a series put out by the manufacturers and accompanied with a sample folder showing the colors and grades of these bonds with the series of business letters. P. C. Batzle, sales manager of the Cantine mills, was present at the exhibit held in conjunction with the Direct Mail Convention, while Hugh Monaghan represented the local distributors as promotion sales representative.

Paper Makers Advertising Club Booth

With a booth that extended full length across the exhibition quarters the group of paper manufacturers comprising the Paper Makers Advertising Club gave wide publicity to the line of products controlled by these manufacturers, comprising twenty leading paper producers in the nation. There was distributed the catalogue of all the brands, with illustrations of this group of manufacturers, the official organ of the club, distributed to printers and buyers throughout the country from the headquarters, 210 Lincoln street, Boston, and edited by Brad Stephens. The president of the club, William Fowler, was present at the exhibition as the head of the Hampden Glazed Paper and Card Company, Holyoke, Mass. Other exhibitors in the group were the Advertisers Paper Mills, Holyoke, Mass.; Albemarle Paper Company; Beckett Paper Company; Chemical Paper Company; A. M. Collins Manufacturing Company; Crocker-McElwain Company; Louis DeJonge and Company; Eastern Manufacturing Company; Gilbert Paper Company; Hammermill Paper Company; Hampshire Paper Company; Holyoke Card and Paper Company; Knowlton Brothers; Millers Falls Paper Company; Neenah Paper Company; Parsons Paper Company; Reading Paper Mills; Strathmore Paper Company; and George W. Wheelwright Paper Company. This booth attracted a large circle of trade associates as well as visitors to the convention with its attractive advertising displays and elaborate advertisements distributed in the many papers included in the products and expensive sample book, freely given as souvenirs.

D. L. Ward Co. Conducts Educational Exhibit

Without featuring displays other than those pertaining to the educational side of paper and printing, the booth of the D. L. Ward Company, 28 South 6th street, was given over entirely to the dissemination of propaganda that would stimulate the use of better papers in order to secure the best results in printed matter and advertising matter. With T. J. Curry in charge of the booth the pamphlets on "Good Printing" were distributed to the visitors by the staff representative along with a broad list of papers featured by that house. President George W. Ward, who recently returned from a tour of the world, was present to greet associates and friends in the industry.

Riegel & Co. In Unique Display

Under the capable talent in decorative art of Victor Arndt, of the staff of Riegel & Co., Inc., a unique booth termed "The Complete Paper House" was made the center of display of a wide range of papers featured. The house was made of paper rolls representing columns with a varied color assortment in the paper which made the booth a rainbow of modern hues. They were represented in the heraldic shield of the mills which adorned the center of the booth and gave prominence to the numerous leading manufacturers represented by this concern. A feature of the display was the newest addition to the Riegel company brands in the blotter grades, the Indian blotters, made by the Rochester Paper Company, Rochester, Mich., for which the firm has just become sole Philadelphia distributor. A. B. Sherrill attended the convention and welcomed the trade visitors while Sales Manager James MacCracken assisted, and distributed the useful little booklet, "The Paper User's Primer," published by the American Writing Paper Company.

Raymond and McNutt Offers Own Lines

Raymond and McNutt gave its own announcements and converted social paper and stationery lines the main display space of the booth devoted to its use. With M. K. Christine extending hospitality as sales manager, the firm gave the visiting advertising members a wide range of selection in announcements, booklets, cards and deckled edges, social stationery grades and high class advertisement stocks adapted for engraved or printed matter. Many new and effective envelopes were included in the offerings with unique and specially designed cuts in the flaps made in its own converting department were included in the social grades and greeting card combinations of card and envelopes, with art tissue linings.

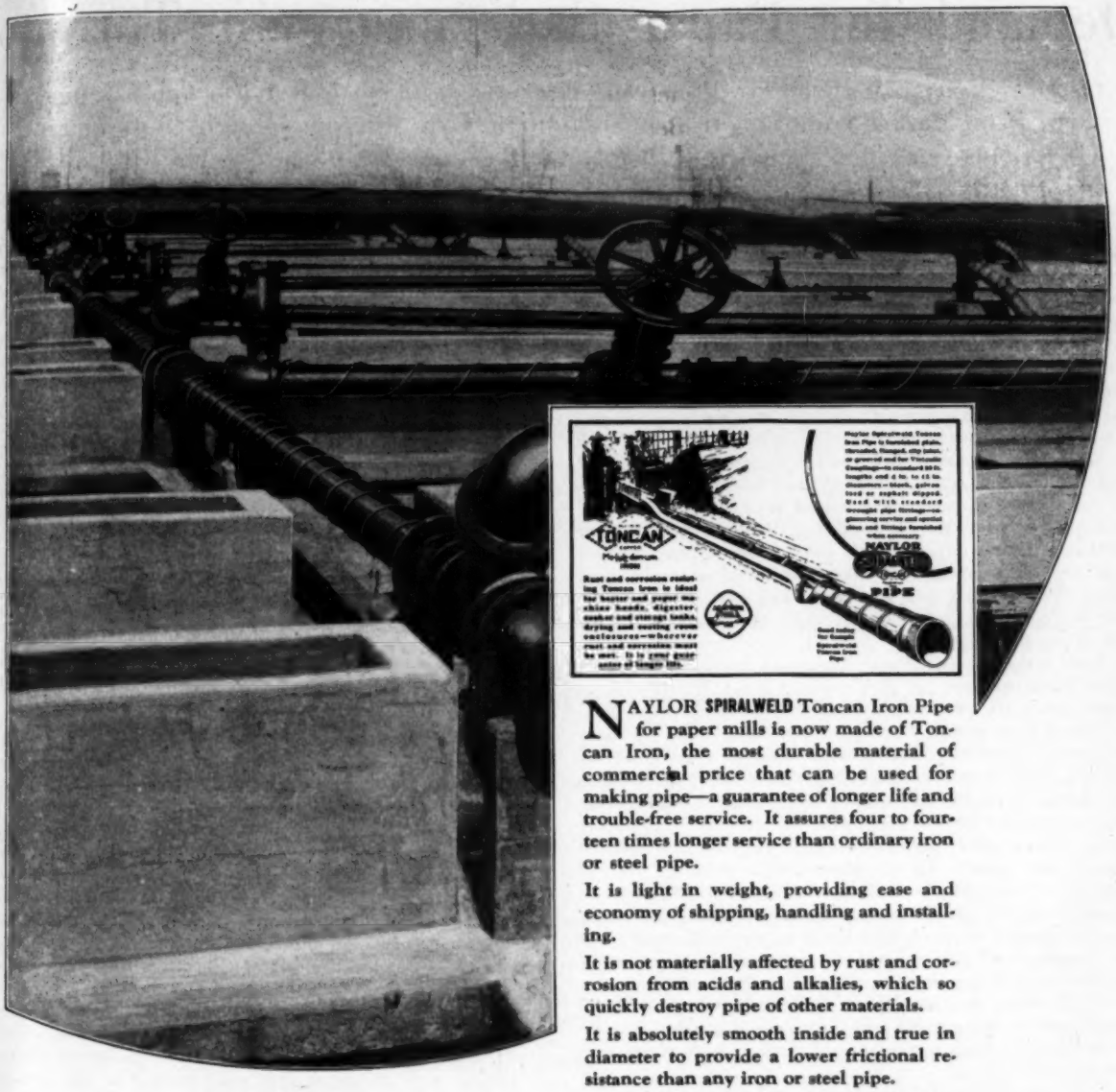
Boston Paper Market Steady

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., October 29, 1928.—Steady demand continues in the wholesale paper market here, with prices stable. There is even a little improvement in all lines of fine papers, according to some of the trade. It is expected that a good volume of orders will come in until the first of the year, at any rate. The coarse paper market is generally fair.

Business in box board is hardly better than fair at present, with values remaining at the same levels. Manufacturers have shown a tendency to advance the price of chip board $2.50 from the prevailing figure of $42.50, but dealers say that business hardly warrants any rise as yet. Orders were placed for filled news board last week at $45.

Conflicting reports are heard in regard to old papers and rags. Some dealers say that there has been more activity in waste paper, while others report a slow market, with a downward tendency. While some state there has been an improvement in the rag market, others say that there has been a downward tendency in both rags and bagging, with a slowness in all grades. In some instances rags have moved fairly well. It is conceded that conditions today are better than they were a year ago at this time, in spite of the political campaign, which seems to have influenced the market to a certain extent.



NAYLOR **SPIRALWELD** Toncan Iron Pipe for paper mills is now made of Toncan Iron, the most durable material of commercial price that can be used for making pipe—a guarantee of longer life and trouble-free service. It assures four to fourteen times longer service than ordinary iron or steel pipe.

It is light in weight, providing ease and economy of shipping, handling and installing.

It is not materially affected by rust and corrosion from acids and alkalies, which so quickly destroy pipe of other materials.

It is absolutely smooth inside and true in diameter to provide a lower frictional resistance than any iron or steel pipe.

It reduces to a minimum capillary attraction and clogging, due to slime.

It is made to wrought pipe standards with threaded and flanged ends for standard pipe fittings, and pipe ends for Bolted and Victaulic Couplings.

If you use pipe in diameters from 4″ to 12″—black, galvanized or asphalt dipped—Naylor **SPIRALWELD** Toncan Iron Pipe, made of Toncan Iron, is most satisfactory and economical. Write us for full details, and a sample section which we will gladly send without obligation to you.

NAYLOR
TONCAN
COPPER
Mo-lyb-den-um
IRON
PIPE

NAYLOR PIPE COMPANY

Main Office and Plant
1224 East 92nd Street, Chicago, Ill.

NEW YORK
25 CHURCH STREET

PHILADELPHIA
WEATHERSPOON BUILDING

KANSAS CITY, MO.
1005 DAVIDSON BLDG.

CHARLOTTE, N. C.
REALTY BLDG.

SAN FRANCISCO, CAL.
LOS ANGELES, CAL.
DUCOMMUN CORPORATION
TELEPHONE TRINITY 0621
EXCLUSIVE DISTRIBUTORS
CALIF., ARIZ., NEV., UTAH

DETROIT
1500 CADILLAC SQUARE BLDG.

CLEVELAND
1367 EAST 6TH STREET

MONTREAL, CANADA
MECHANICAL EQUIPMENT COMPANY
NEW BIRKS BUILDING

Demand for Paper Satisfactory in Toronto

Increased Activity Experienced in Practically Every Department of Ontario Paper Industry—News Print Market Said to be In Better Condition Than for Some Months With Operations Curtained Somewhat—Board Manufacturers Enjoying Seasonal Rush

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., October 29, 1928.—The month has closed with a satisfactory volume of business both in the manufacturing and wholesale ends of the paper trade and the outlook for the balance of the year is of the brightest. Larger and more numerous orders were booked during the past four weeks and this has allowed the paper jobbers to overtake the loss of business experienced during September, with a considerable amount to spare. Practically every department of the paper trade is busy now and there is increased market strength in all lines. Even the pulp market has strengthened materially after a summer's dullness, bleached sulphite especially having strengthened to a point where it is hard to get. One big Toronto mill buyer stated that if he wanted 500 tons of bleached sulphite tomorrow he did not know where he could obtain it. The partial explanation is that the United States paper mills, which have not been carrying much stock for some time, are now looking for their winter's supply, while some of the Canadian paper mills are doing the same thing. On the other hand ground wood is fairly plentiful as is also unbleached sulphite to a slightly lesser degree. Prices of all pulps remain unchanged but the demand is decidedly better.

A good demand exists for all classes of fine papers, such as ledgers, bonds, writings and book paper, although distributors and manufacturers of coated stock say they could handle more business than they are getting. The paper converting trade has had a fairly good month and at the moment there is a good call for envelopes, blank books and general stationery lines. The coarse paper market is slightly less active than it has been but there are signs of a general improvement in the market tone for wrapping paper and bags, while kraft paper is enjoying good sale both domestically and abroad. The Canadian West is absorbing a lot of kraft and orders from the East are also plentiful and liberal in individual size. A splendid business is being done in light weight paper partially as the result of a lot of intensive advertising and sales campaign and mills report that they are making more money now by reason of consolidation of standard lines and elimination of certain grades that have failed to yield a profit in the past. Crepes, paper towels and standard tissues are in excellent demand and tonnages are being increased right along with the mills operating close to capacity.

All the mills are busy. There is a lot of buying of book paper by publishing firms and it is estimated that many of the book mills are booked up with orders that will carry them past the opening of the coming year. The printing industry is also absorbing a fair tonnage of book paper, together with bonds and ledgers, although there was slightly less activity in printing circles during the past month than there was during September. While not operating at capacity the bond and ledger mills are disposing of a fair tonnage and generally speaking the market for these lines is satisfactory. Board mills continue busy and some of the distributors say it is difficult to get anything like prompt delivery. There is a good demand for all classes of paper boxes, cartons and containers and this branch of the paper industry may be said to be enjoying real prosperity, with a good Christmas trade already under way.

News Print Outlook is Brightening

As far as the news print situation is concerned, the industry appears to be in a better position than it has been for some months. The improvement, though, is not such as to warrant any appreciation of the shares of the news print companies at least not yet. The average scale of operations at the Canadian mills still lingers around 80 per cent of their capacities. While some of the mills are being operated steadily at 100 per cent capacity, this fact does not mean that other companies are only operating on a 60 per cent capacity basis. Today there is not one Canadian news print company which is operating its plants at 60 per cent of their rated capacity. Those that are restricted are operating at between 70 and 80 per cent of the capacities of their machines. Within recent months, it is true, the scale of operations at some of the companies was well below 70 per cent. But orders are coming along better with a resulting betterment in operating conditions. News print men say, though, that the betterment has not been in effect long enough to warrant any rising tide of optimism touching the industry as a whole. Probably the news print producers have still many months of curtailed operations before them. There is, of course, always an increase in demand for news print during the autumn months as compared with the summer, when circulations and advertising in the United States papers decline. As it is only the smaller companies which are operating at full capacity, obviously, the larger companies with the greater production are not operating proportionately below the 80 per cent average of the whole industry.

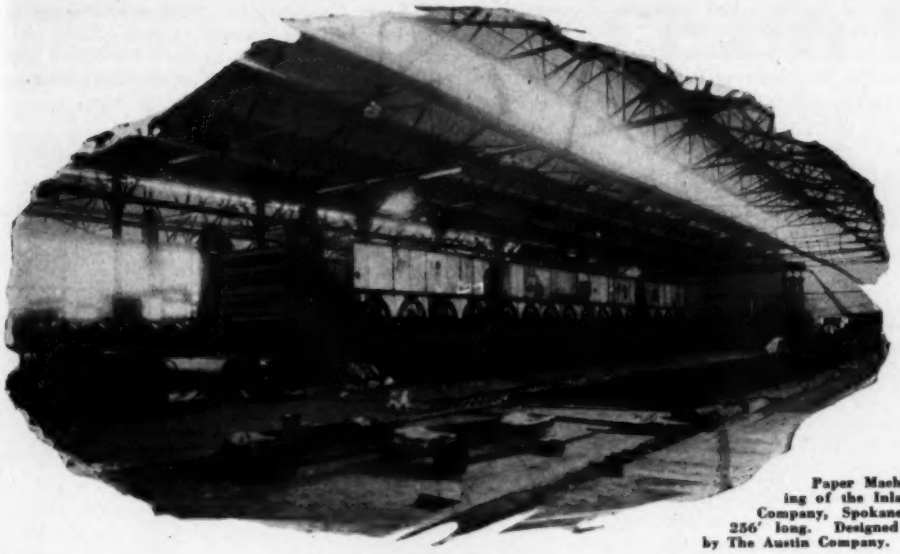
Thos. Armstrong Killed in Accident

The Toronto paper trade was shocked a few days ago at the news of the death in a motor crash of Thomas Armstrong, Toronto representative of the Laurentide Paper Company, and widely known throughout the news print industry in Canada. He handled practically all the news print that came into the city, which brought him into close touch with the printing and publishing trades, as well as the paper industry generally. Mr. Armstrong was one of four citizens to lose their lives in a crash on the Provincial Highway near Barrie, Ont. They were in the last car of a funeral procession. The car in which they were riding had been delayed and was speeding up to catch the rest of the cortege when the driver met another car on the brow of a hill, after he had turned out to pass another car. There was a head-on collision, Mr. Armstrong dying from his injuries a short time after the accident.

The late Mr. Armstrong, a Canadian of Irish-English parents, was born in Stratford, Ont., 54 years ago, but had been a resident of Toronto since childhood. He was educated in this city and commenced his career with the Grand Trunk Railway express and freight department, having been appointed express agent at the opening of the old Riverdale station in Toronto. Later he transferred to the Canadian Pacific Railway, leaving this later to join the Verrel Storage Company of which he was general manager and superintendent. He had been with this company for twenty years at the same time handling the Laurentide product in Toronto. He was a Mason, a prominent Liberal and a business man with high ideals. Besides his wife, Mr. Armstrong is survived by two sisters, of New Zealand, and one brother, George, of Honolulu.

Swamped Drainage Helped Pulpwood

Experiments conducted by the Provincial Forestry Board, in the Abitibi district, have demonstrated that tile drainage of black spruce lands produces a growth of timber greatly in excess of that which takes place under swampy conditions. Cross section of trees about fifty years old have been received by the Hon. William Finlayson, and the difference between the "before" and "after" stages is strikingly shown in the markings which indicate annual growth. The practical aspect of the matter is one of obvious importance, and drainage of pulpwood swamps in northern swamps, for the purpose of accelerating growth of timber, may become a policy of



Paper Machine Room Building of the Inland Empire Paper Company, Spokane, 142' wide by 256' long. Designed and constructed by The Austin Company.

Speed and Economy are Assured by the Austin Method

What do you want to be sure of when you build your new paper mill? An efficient plant, of course, properly designed for its purpose—that's the first consideration.

Then—

Speed and economy in construction.

The Austin Company has had fifty years of industrial building experience, and in the design and construction of paper and pulp mill buildings in particular, can effect real economy.

In the design of your paper mill buildings and in their construction, Austin will cooperate with your engineer and will undertake the entire project under one contract which guarantees: a lump sum price agreed upon in advance; completion at a definite date, with bonus and penalty clause if desired; quality of materials and workmanship throughout.

Approximate costs and other information will be furnished promptly, without obligation. Wire, phone or mail the memo below.

THE AUSTIN COMPANY—Engineers and Builders—CLEVELAND

New York Chicago Philadelphia Detroit Cincinnati Pittsburgh St. Louis Seattle Portland
The Austin Company of California: Los Angeles and San Francisco The Austin Company of Texas: Dallas

AUSTIN

Complete Building Service

Memo to THE AUSTIN COMPANY, *Cleveland*— We are interested in a

_____project containing_____sq. ft. Send me a personal copy of "The Austin Book of Buildings." Individual_____

Firm_____ City_____

PTJ 11-1-28

the Department of Lands and Forests, which is deeply concerned with the problem of reproduction on cut-over lands. The Forestry Board, headed by Dr. C. D. Howe, dean of the Faculty of Forestry, University of Toronto, has been giving attention to the matter for a couple of years. Effort is also being made to encourage pulpwood operators to make use of jack pine, balsam and other soft woods, in order to conserve spruce.

Three Machines Now On at Abitibi

On October 20, paper machine No. 2 was placed in operation at the plant of the Abitibi Power and Paper Company at Sault Ste. Marie, making three machines now in operation. The local plant is now within one machine of working at full capacity. The starting of machine No. 2 adds some thirty more employees to the staff of the mill. Additional business secured by the company is given as the reason for starting the machine, and it is expected that the three in operation will be functioning at full speed for an indefinite period.

Alliance Paper Company's Plans

Formation by Howard Smith and Harold Crabtree, of the Alliance Paper Mills Company, through the purchase and merging of Ritchie & Ramsay, Toronto; the Georgetown Coated Paper Mills and the Lincoln Pulp and Paper Company at Merritton, has now been completed with a central office in the Atlas Building, Toronto. The new company figures that by the redistribution of tonnage on certain grades, it will be possible to effect economies in production cost and thus avert increases in the price of the product. Longer runs per machine order, it is pointed out, are not only more economical, but assure the consumer of a more uniform product. The executives, in organizing the new concern, are looking ahead and anticipate the effect of natural forces that are already in evidence in the industrial world. The grouping of the mills under a single operating control gives each plant the benefit of the experience and advice of several additional heads. For instance, the coating mills have both George Pauline of Ritchie & Ramsay, and L. E. Fleck, of Georgetown, while the paper mills have Howard Smith, Harold Crabtree, K. S. Maclachlan, and George Winlow. These experienced paper men and K. C. Pendock are the principal officers of the Alliance Paper Mills, Ltd. The president is C. Howard Smith; vice-president, Harold Crabtree; managing director, K. S. Maclachlan; director and manager of coating mills, L. E. Fleck; sales manager, George Winlow. It is not intended to install any new machinery, but some overhauling will probably be carried out, as for example, at the Lincoln mill, where certain alterations are now under way to improve the three-cylinder paper machine, which will manufacture rope papers, flour sack, jute, tag, electrical insulating paper, etc. A new system of stock preparation has recently been developed that is producing very high grade products. The Lybster mill at Merritton will continue to produce specialty lines, including glassine, grease proof, onion skin, parchment, waxing papers, etc.

Box Makers Visit New Dominion Mill

Paper box manufacturers from various parts of Canada included in the membership of the Canadian Paper Box Manufacturers' Association and the Toronto Carton Council, were guests of E. D. Newell, president of Dominion Boxboards, Ltd., a few days ago, when they were shown over the company's new mill on the Toronto waterfront which is just now getting into production. The visitors inspected the mill in the afternoon and were impressed by the modern equipment installed for the manufacture of box board. Then came a dinner at the King Edward Hotel and later ringside seats for the Genaro and Belanger boxing bout. Among the guests were paper box men from Galt, Stratford, Kitchener, Brantford and London, while there were also a number of the board distributors from Toronto and other centers, all of whom complimented Mr. Newell on the fine equipment of his splendid new mill.

Notes and Jottings of the Trade

Returning to Toronto a few days ago from several weeks spent in England, H. A. Goldsbrough, secretary-treasurer of the Hodge-Sherriff Paper Company, Ltd., that city, reports that he found general commercial and business conditions in the Old Land steadily improving. For one thing, they have had a remarkably fine harvest in England and this had the effect of generating optimism. When he was in London he saw W. H. Sherriff, formerly of the Toronto office of the company, who left Canada a couple of years ago owing to ill health. Mr. Goldsbrough has left Toronto on a tour of the Canadian West.

C. W. Iliff, of John Dickinson & Co., Ltd., paper and board manufacturers, London, England, has arrived in Toronto and will spend some time in Ontario visiting paper mills and distributors in various parts of the province.

The Toronto Carton Council and Associate Members' Bowling tournament is now in full swing at the Christie Street Alleys. This week the Wildcats and the Dynamiters broke away from the field with three straight wins at the expense of the Giants and Hinky Dinks, who occupy the cellar position with three straight losses.

In an effective broadside on Tanton Book, which has just been put in the mails, the Fred W. Halls Paper Company, Ltd., Toronto, are offering cash prizes for the most complete and varied assortment of samples of work produced by any one printing house and printed on Tanton Book—that is to say, samples which show the greatest variety and number of uses. The prizes will be awarded to the employees of printing houses in Ontario sending in the most complete assortment of samples. A reproduction of a famous painting on one of the sheets of the broadside illustrates the value of the paper in the printing of color plates. Prizes are to be awarded in time for Christmas.

Champion Paper Co. Finishing Bag Plant

[FROM OUR REGULAR CORRESPONDENT]

CARTHAGE, N. Y., October 29, 1928.—Construction work on the new bag mill being erected as an addition to the Champion Paper Company is rapidly nearing completion and installation of the machinery will begin shortly. Some of the equipment for the new mill began to arrive this week coming from the Watertown plant of Taggart Brothers Company. The new bag factory will manufacture the Taggart multi-wall bag which is in wide use for cement and other products formerly put up in cloth sacks.

The cement bag department of the Taggart Watertown plant closed down this week to permit removal of the machines and other equipment to the new Carthage factory. Many of the employees from Watertown will move to Carthage to work in the factory when it is completed.

In connection with the closing of the cement bag department of the Watertown mill it is pointed out that this is the only department of that plant that will be affeced by the change. Bag paper will continue to be made at Watertown and will be converted into bags of various descriptions. The new Carthage bag factory will draw its paper supplies from the Champion mill.

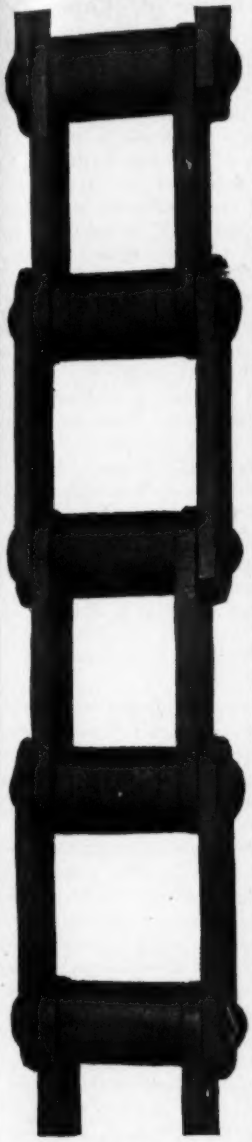
Gets Large Compensation Settlement

PYRITIES, N. Y., October 27, 1928.—One of the largest settlements made under the State Compensation Law in the case of an injured paper mill employee was made by Referee James P. Richardson recently when he announced a final settlement of $2,220 for Fay Peters, an employee of the De Grasse Paper Company. This case has aroused considerable interest in paper mill circles.

Peters was injured in the De Grasse plant in December, 1923. He slipped when walking down a flight of stairs, suffering an injury to his back which was diagnosed later as fracture of three vertebrae. He has been unable to do much work since the injury and in 1925 underwent an operation at Syracuse by a specialist for the purpose of relieving his condition.

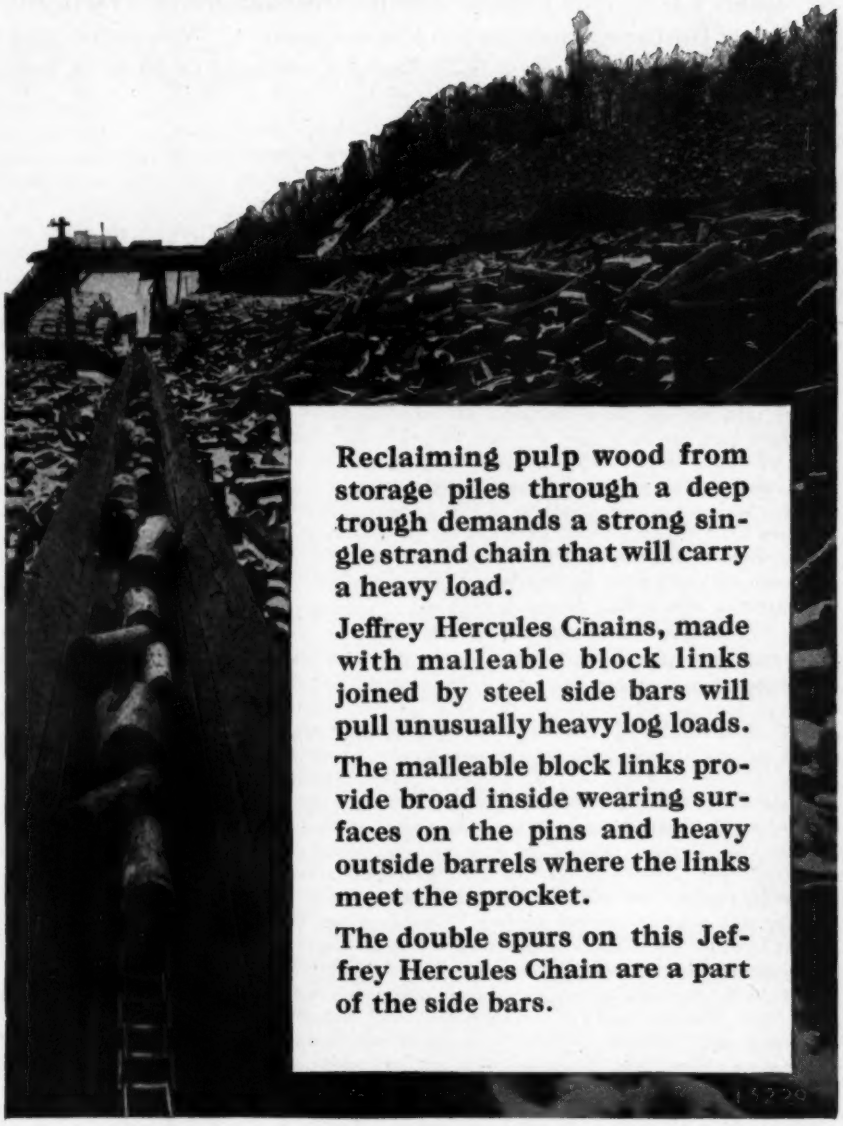
For a considerable period he had been drawing compensation of $20 weekly which with the final award brings his total compensation to the largest amount paid out in the case of an injured paper mill worker in this section since the compensation law was enacted.

Jeffrey Chains for Every Service



Jeffrey Hercules Chain for drives and rough service handling pulpwood, coal, etc.

A Long Chain Haul



Reclaiming pulp wood from storage piles through a deep trough demands a strong single strand chain that will carry a heavy load.

Jeffrey Hercules Chains, made with malleable block links joined by steel side bars will pull unusually heavy log loads.

The malleable block links provide broad inside wearing surfaces on the pins and heavy outside barrels where the links meet the sprocket.

The double spurs on this Jeffrey Hercules Chain are a part of the side bars.

The Jeffrey Manufacturing Company

931-99 North Fourth St., Columbus, Ohio

New York	Rochester, N. Y.	Pittsburgh	Boston	Cleveland
Buffalo	Philadelphia	Scranton, Pa.	Cincinnati	Detroit
Chicago	Milwaukee	Denver	Los Angeles	Houston
Charleston, W. Va.	St. Louis	Salt Lake City	Birmingham	Montreal

51 YEARS OF SERVICE TO INDUSTRY

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MATERIAL HANDLING EQUIPMENT

Jeffrey Products

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Coal and Ashes Handling Equipment
Skip Hoists
Chains and Attachments
Sprocket Wheels—Gears
Crushers—Pulverizers
Sand and Gravel Handling, Washing and Screening Equipment
Locomotives
Coal Mine Equipment
Tipple Equipment
Ventilation Fans

Paper Demand Rapidly Improving in Chicago

Favorable Conditions Experienced by Distributors of Practically All Lines of Paper — Fine Paper Business Expanding—Consumption of Newsprint and Printing Papers Steadily Increasing—Box Board Continues to Move in Excellent Volume

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., October 22, 1928.—The past week in Chicago paper markets has been a continued note of increased buying with all lines of paper experiencing more favorable conditions. Fall business in Chicago is rapidly improving with the coming of cooler weather and an increase in the size of newspapers and in the use of direct mail is bringing about a bigger volume of news print and printing paper used in direct mail advertising.

The board market continues to be very good with box board featuring the various grades in this market. Production is being taken up by steady demand. The fine paper market is, according to report, one of the brightest spots in current reports doubtless because of the quiet tone of this market for some months previous. At any rate, the fine paper merchants are more optimistic than they have been for some time although the prices are remaining about the same. With little margin for any appreciable profit fine paper merchants are finding solace in something nearer to large quantity buying. Wrapping papers are in excellent shape with Southern kraft reported to be continuing its satisfactory position of last week. From now until after the holidays wrapping paper merchants are expected to be very busy. Tissues share the same characteristics with holiday buying coming on.

Chicago Paper Association Celebrates

The Chicago Paper Association held their first October meeting on October 9 at the Bismarck Hotel. The meeting was in the nature of a jubilee celebration for the rapid and very substantial growth of the association and drew seventy attendants including almost the entire membership roster together with a number of guests. One of the features of the program was the talk of Mr. Harrison of Stevenson, Harrison and Jordan, the firm of engineers engaged by the association to act in a secretarial and advisory capacity. Mr. Harrison outlined the program to be carried out by his firm in the interests of the Chicago Paper Association and his concise program met with the approval of those present. The program also included a speech by Jack Wilhelm, of the Sieladn Paper Company. Alfred Inlander, first president of the association, was presented with a set of resolutions in token of Mr. Inlander's interest in the organization and its progress during the past few years. J. L. Fox, attorney for the association, also delivered an interesting talk. Included in the lists of guests were a number of paper merchants from Milwaukee, Wis., who are taking a very active interest in the work of the Chicago Paper Association.

Mr. Leo Altholz, president of the association, has announced that the next meeting of the association will be held Tuesday, October 23, at the Bismarck. While the program is not yet complete Mr. Altholz expects that a great deal of the time will be given over to a discussion of the plans of Stevenson, Harrison and Jordan for the benefit of the association. Working plans will have taken a definite shape at that time and Mr. Altholz says it is possible that the first survey of the cost investigation will be ready for members at that time.

Folding Box Rate Agreement

The Paperboard Industries Association has announced that the first agreement on depreciation rates and the methods of depreciation accounting in accordance with the recent plan of the Internal Revenue Bureau has been made with the Folding Box Group of the Paperboard Industries Association. The plan consists of a study of depreciation and obsolescence in an industry conducted by a trade association in cooperation with the governmental bureau. With a schedule of rates justified by the experience found in an industry, definite instruction can be given to the income tax auditors and much time and discussion can be avoided in their work. From the standpoint of uniform cost accounting in an industry the establishment of standardized depreciation rates is a big step forward. The collection of information and tabulation of results upon which uniform rates could be built has taken the association several months. The process consisted first of sending out to every known maker of folding boxes in the country a questionnaire asking not only for the rates he used to cover depreciation and obsolescence of his principal asset of plant, machinery and equipment but also what he considered from past experience to be the years of useful life for each item.

The next step of tabulation presented a problem because the records of equipment in each plant were incompletely given and when shown were often times not comparable, according to the association's report. Fortunately the special census that the Paperboard Industries compile each year for the folding box industry included the tonnage output for each plant and this was available as a factor in giving recognition of relative size and importance of each response in the questionnaire. The result was a "weighted" average. With this cross section of judgment from leading manufacturers it was not difficult according to the auditors of the association to arrive at a set of rates acceptable to both the Income Tax Division of the Treasury Department and the industry as a whole.

It is evident that with Government approval and the publicity given to the findings throughout the industry, it will be but a short time before all folding box plants will adopt uniform rates as being correct accounting procedure. Further information on this plan now being used by the Paperboard Industries Association may be gained by writing to Grafton Whiting, accountant for the Paperboard Industries Association, 608 South Dearborn street, Chicago.

The Salesmen's Association of the Paper Industry, Chicago Division, will inaugurate a series of interesting and helpful talks at its regular Monday meetings beginning on Monday, October 29, according to H. R. Knott, president of the local organization. Each successive Monday speakers will be chosen from various paper fields to talk to the salesmen in an effort to bring about the closest possible cooperation between salesmen and paper merchants. The wrapping paper field will be the first on the series with Leo Altholz, of the Inlander-Steindler Paper Company, Chicago, as the first speaker. Mr. Altholz is also president of the Chicago Paper Association. He is a very interesting and forceful speaker and salesmen attending the meeting will be treated to an informative talk from the viewpoint of the wrapping paper field.

News of the Trade

The Ontario Company, 500 South Throop street, Chicago, recently issued some direct mail advertising in the form of very attractive 10 inch blotters containing a table of bulk mailing cost compared to regular third class postage rates. The table includes the weight per piece in ounces relative to circulars, printed matter, merchandise, excepting books or catalogs of 24 pages or more, rates for which are given in a separate table, together with the information that to secure the advantages of the above rates not less than 200 pieces or 20 pounds must be mailed at one time. The piece of direct mail sent out to the trade is indicative of the way in which Chicago paper houses are going after busines with the aid of the new postage laws now in effect. Each concern usually asks that they be allowed to consult with the direct mail user on his various problems.

DU PONT *Dyestuffs*

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Crocein Scarlet
N EXTRA

For the dipping of plain and crepe tissues and calender coloring board, we recommend du Pont Crocein Scarlet N Extra. It possesses excellent solubility; high tinctorial power; brilliancy of shade and extreme fastness to light.

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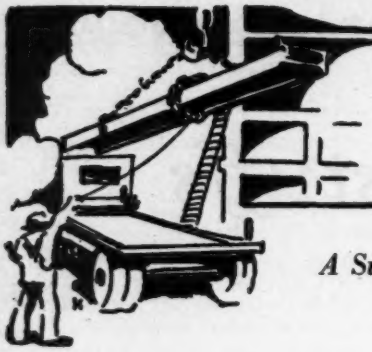
Chicago, Ill.

709 Hospital Trust Building
Providence, R. I.

569 Mission Street
San Francisco, Calif.



CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Hoboken, N. J.—The Cleveland Container Company, 10630 Berea Road, Cleveland, Ohio, manufacturer of paper containers and kindred products, has leased space aggregating about 22,000 square feet in building B of the Hoboken Factory Terminal, Sixteenth street and the Hudson River, Hoboken, and will use as an eastern factory branch, storage and distributing unit. The company recently acquired the plant and business of the Tulip Container Corporation, College Point, Flushing, L. I., and plans to remove this works to the Hoboken location where eastern operations will be concentrated in the future.

Ilchester, Md.—Bartgis Brothers Company, Hamburg and Bush streets, Baltimore, Md., manufacturer of paper board products, folding paper boxes, etc., has concluded negotiations for the acquisition of the plant and property of the Thistle Cotton Mills, Inc., Ilchester, Md., comprising factory units and housing development for workers on 90-acre tract of land. The new owner plans the early remodeling of mill, with installation of equipment for regular line of production, estimated to cost about $150,000; equipment requirements will be handled through the office of Fred L. Smith, 21 East Fortieth street, New York, engineer. E. H. Lupton is president.

Davenport, Iowa—The White & Wyckoff Manufacturing Company, Holyoke, Mass., manufacturer of writing papers, pads and other stationery, has acquired factory at Davenport, Ia., comprising one-story unit, and will remodel and equip in near future as a branch factory and distributing works. Tract of property adjoining has been secured to provide for future expansion.

New York, N. Y.—Quick Service Box Company, Inc., has been incorporated under state laws, to succeed to the plant and business of company of same name operating at 323 West 39th street. It is understood that an expansion program will be carried out for increased production. Company will operate with capital of $150,000, and is headed by John W. and Herbert Kieckhefer, Riverton, N. J.

Philadelphia, Pa.—In connection with projected paper mill of the United States Gypsum Company, 300 West Adams street, Chicago, Ill., to be located at Fifty-eighth street and the Schuylkill River, Philadelphia, where tract of property comprising 7½ acres has been acquired, and recently reported in these columns, the company has awarded general building contract to the Morton C. Tuttle Company, 31 St. James avenue, Boston, Mass., for initial units of general products plant. It will consist of several structures, reported to cost about $1,250,000 with equipment. Work will proceed at an early date and it is proposed to have completed early in the coming year; following, the company will place work under way on proposed paper-making unit.

Spartanburg, S. C.—The Grant Bag Company, recently organized, is reported to be planning the early operation of a local plant for the manufacture of paper bags and containers. The company is headed by C. S. and G. A. Harley, both of Spartanburg.

Beloit, Wis.—The Beloit Paper Box Company, Second street, is reported to have preliminary plans under way for the construction of a new local factory, estimated to cost about $40,000, with equipment. Architect will soon be selected to prepare detailed plans.

Memphis, Tenn.—H. Blockman & Co., 376 North Front street, paper goods, has plans in progress for the construction of a new four-story paper storage and distributing unit at 61 Overton street, estimated to cos abou $55,000, with handling and other equipment.

Framingham, Mass.—The Angier Corporation, manufacturer of paper specialties, will place work in progress at an early date on new storage and distributing plant on Fountain street, for which plans were recently prepared by Monks & Johnson, 99 Chauncy street, Boston, architects. General building contract will be handled by Thomas A. Sheehan, 403 Union avenue, Framingham.

Brooklyn, N. Y.—The Gray Envelope Manufacturing Company, 83 33rd street, has leased additional space in one of the industrial buildings at South Brooklyn held by the Bush Terminal Company, and will use for increase in present storage and distributing facilities.

Paterson, N. J.—The Center Paper Box Company, Governor street, plans replacement of loss sustained by fire October 20; no official estimate of loss has been reported. The company occupied three floors of building owned by the Paterson Brewing & Malting Co., under lease.

Salem, Ore.—The Western Paper Converting Company is developing plans for the erection of new mill unit, 100x240 feet, estimated to cost close to $100,000, with machinery, and it is proposed to place work in progress early in the coming year.

Brooklyn, N. Y.—The Continental Paper and Bag Corporation, foot of 51st street, has acquired space in the Bush Terminal Company industrial building at South Brooklyn, and will utilize for additional storage and distributing facilities for its products.

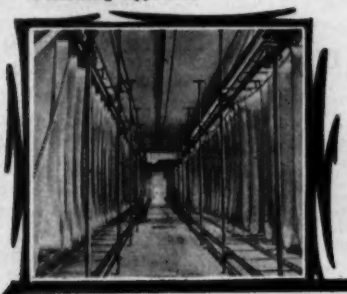
Woronoco, Mass.—The Strathmore Paper Company, Mittineague, will proceed with work on new addition to its mill at Woronoco, to be equipped for large increase in present output. It will be four-story, 45x200 feet, and is estimated to cost about $175,000, with equipment. It is proposed to have ready for machinery installation early in the spring.

Philadelphia, Pa.—The Eaton, Crane & Pike Company, Pittsfield, Mass., with Philadelphia headquarters at 1024 Filbert street, manufacturer of paper goods, has leased space in Building at 212-4 South Ninth street, aggregating approximately 10,000 square feet, and will use for local headquarters and distributing service, removing operations from the Filbert street address to this location.

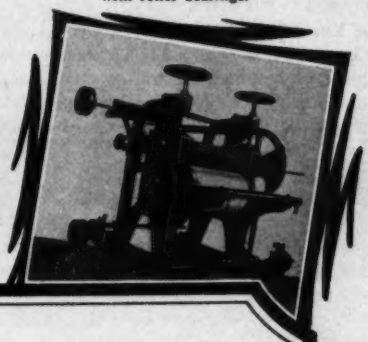
Oakland, Cal.—The Sunset-McKee Sales Book Company, commercial papers, etc., has asked bids on general contract and will soon make award for the erection of new plant on Livingston street near Cotton street, recently reported in these columns. It will comprise one-story, brick and steel building, 160x200 feet, for

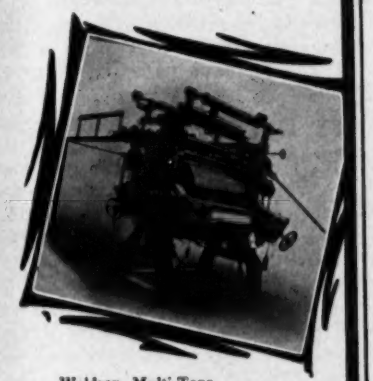
Waldron 6 Color Surface Printer.

Waldron Mechanical Festooning Apparatus.

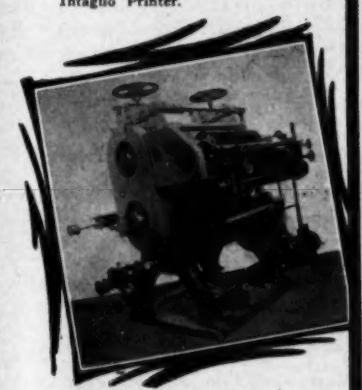


Open Front Embosser with roller bearings.





Waldron Multi-Tone Intaglio Printer.



Waldron Embosser with Inking Attachment.

Waldron Machinery Will Give You a Greater Share Of The Constantly Expanding Market For Converted Paper

This century old organization of machine building specialists stands ready to assist progressive manufacturers to take full advantage of the new opportunities for greatly increased business. Never before has the future looked so bright for those who are prepared and equipped to meet the increasing demand for Utility Trims and Wraps, Box Papers, Single Purpose Servers, Etc.

You may simply want information on the elements of this expanding market; or advice on improved products and effects that are within range of your present equipment; or expert engineering data concerning necessary new equipment for your plant.

Whatever your requirements, if it is in connection with Paper Converting, use the facilities and service of our Engineering Dept. Write for copy, "Converting of Light Weight Papers."

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208 W. Washington St.

PORTLAND, ORE.
303 Lumbermens Bldg.

WALDRON

Paper Converting Machinery

which plans were arranged by Ellison & Russell, Pacific Building, San Francisco, engineers.

New York, N. Y.—The Interboro Container Corporation, recently organized, is reported to be planning the early operation of local plant for the manufacture of paper cartons, boxes and similar containers. The company is operating with capital of $100,000, and is headed by Louis H. Clark and Harry A. Holtzman, 145 Green street, New York.

Buckingham, Que.—The James MacLaren Company, Buckingham, has awarded general building contract to William I. Bishop, Ltd., 10 Cathart street, Montreal, for the construction of its proposed new power plant at High Falls. about 23 miles from Buckingham, on the Lievre River, to be constructed in connection with new paper and pulp mill at this location. The power development will comprise storage dam with capacity of 25,000,000 cubic feet, three 30,000 hp. generating units, with extensive transmission system; at a later date it is proposed to install the fourth prime mover of like capacity. The paper mill, consisting of a number of structures will be given over to news print production, and will have an initial output of 250 tons. The entire project is estimated to cost about $10,000,000. R. D. Ferguson, New York, engineer, has been engaged by the company to design and carry out the two projects.

Port Arthur, Ont.—The Thunder Bay Paper Company, Ltd., has completed the construction of a cast iron pipe line, 10-in. in diameter and about 2 miles long between its grinding mill at Current River and paper-making unit, to be used for the transmission of ground wood pulp in flush form. The installation has been in the form of an experiment for increased efficiency in handling raw material, and tests up to the present time have been highly satisfactory.

New York, N. Y.—The American Bank Note Company, 70 Broad street, has work under way on extensions and improvements in two-story factory on Barette street, Bronx, including a new addition and alterations in existing structure. Additional equipment will be provided for increased output. Work is estimated to cost about $225,000. Oscar P. Cadmus, 157 East 44th street, is architect.

New Companies, Etc.

Andover, Conn.—The Case Board Company has arranged for change of company name to the Case Fiber Company. Plans have recently been approved by the company for the rebuilding of its mill, destroyed by fire several weeks ago with loss reported at close to $75,000.

Kalamazoo, Mich.—The Excel Paper Company, a Delaware corporation, has filed notice of increase in capital from $200,000 to $500,000, and common stock, from 1000 to 5000 shares, no value, a portion of proceeds to be used for expansion.

Holyoke, Mass.—The American Writing Paper Company is arranging for a change in capital structure, to be carried out in connection with general financing and operations.

New York, N. Y.—The Dollar Stationery Company, Inc., has been formed with capital of $10,000, to manufacture and deal in paper and card stocks, etc. The incorporators are Philip J. Jaffe, and Stanley D. Rees, 2747 Sedgwick avenue, Bronx.

New Companies, Etc.

Morristown, N. J.—Lowe's Inc., has been incorporated with capital of $125,000, to manufacture and deal in paper specialties. including card indexes and other stationery products. The incorporators are James T. and John H. Lowe, Morristown. The company is represented by Lyman K. Smith, Dover, attorney.

Cornwall, N. Y.—The Bear Mountain Tissue Mills, Inc., has been incorporated with capital of $350,000, to manufacture and deal in tissue and other papers. The company is represented by A. Furman, 1457 Broadway, New York.

Los Angeles, Cal.—The California Standard Stationery Company has been incorporated with capital of $25,000, to manufacture and deal in paper specialties, etc. The incorporators are W. H. and M. Kindley and Ralph M. Westcott, Los Angeles. Frank Rouse, 1105 Broadway Arcade Building, Los Angeles, is representative.

New York, N. Y.—The Embassy Cordage and Paper Company, Inc., has been incorporated with capital of $15,000, to deal in wrapping and other papers, etc. The incorporators are Morris Jaffe and Julius A. Deutsch, 2758 Cruger avenue, Bronx, New York. The company is represented by Herman W. Bernstein, 100 East 42nd street, New York, attorney.

Chicago, Ill.—Acme Show Card & Poster, Inc., 54 West Lake street, has been incorporated with nominal capital of $5,000, to manufacture and deal in display cards, and other paper products. Incorporators are Roy C. Cohen and John B. Radford. Company is represented by William A. Peterson, 14 South Fifth street, LaGrange, Ill.

To Survey Resources of Laborador

The announcement that the Government of Newfoundland is planning to make a survey of the resources of Labrador, with a view to development on a large scale, is attracting widespread attention to the vast slice of continental America, 110,000 square miles in extent, title to which has been definitely vested in Newfoundland by the Privy Council, the Empire's final court of authority.

It is claimed by those who have knowledge of the territory that in the portion belonging to Newfoundland there are pulpwood resources having a value of from $250,000,000 to $300,000,000. The forests are composed of black spruce, white spruce, balsam and spruce. During last winter the International Paper Company had two cruising parties in the region, one operating in the Hamilton Inlet and the other along the southern parts of the territory. While their reports have not been made public, Dr. H. L. Paddon, of the International Grenfell Association, who is in charge of the Grenfell Hospital in Hamilton Inlet, and was in touch with these men during the period of their stay, wrote in a recent issue of the Grenfell Magazine that the result of their investigation was to satisfy them that the wealth of the region was under-estimated rather than otherwise.

The forest growth is of practically the same density as that of the eastern portion of Quebec, where the estimate of Canadian experts is that an acre of land will produce about four cords of pulpwood.

It is claimed that pulpwood could be cut in Labrador, brought to the southern coast by water, and then converted into the manufactured product, with the advantage that the southern coast is ice-free all the year round.

In addition to its forest resources, there are enormous water powers in Labrador. The territory contains one of the largest rivers in North America, the Hamilton, with a watershed of some 70,000 square miles and a length of some 300 miles. The grand falls on this river constitutes one of the most impressive spectacles to be found anywhere. They have a drop of 302 feet, as compared with Niagara's drop of 165 feet, and with the rapids above and below, could be made to produce 4,500,000 h.p. There are many other rivers with impressive water power possibilities.

Quite a number of important concerns, chief among them the International Paper Company, are investigating the possibilities of Labrador, and as the Newfoundland government is anxious to begin the exploitation of the resources of this neglected corner of the continent, it will probably not be long before important developments are announced.

Peter J. Schweitzer Employees Insured

Group life insurance policies covering the lives of nearly 200 employees of Peter J. Schweitzer, Inc., paper manufacturers, of 200 Fifth avenue, New York, have recently been acquired through the Prudential Insurance Company of America. The total amount involved is $134,600. Each worker is insured in amounts ranging from $500 to $2,500, according to the rank or position held.

Let us tell you about this Stock Regulator!

The DeZurik Stock Consistency Regulator not only indicates the stock density, but regulates it instantaneously — without power or effort on the part of an operator. Due to its exclusive features of design and construction, it gives an absolute control over stock density—as easily as looking at a gauge.

With it all stock for the paper machine is regulated—and immediate correction made if the stock is not the correct density. Water is added instantly to bring the density correct. And, unlike other stock regulators, the DeZurik has its own constant water head control.

Its performance is so certain and definite—yet the operation cost is negligible.

Investigate the DeZurik Stock Consistency Regulator now. Complete details upon request—without obligation.

VALLEY IRON WORKS CO.

Machinery for Paper and Pulp Mills

APPLETON WISCONSIN

New York Office: 350 Madison Avenue

Western Manufacturing and Sales Division: Smith and Valley Iron Works Co., Portland, Oregon

New York Trade Jottings

A. E. Cadman, assistant secretary of the Canadian Pulp and Paper Association, is visiting New York this week.

* * *

E. A. Wallberg, president of the Lake St. John Power and Paper Company, Dolbeau, Que., is a prominent New York visitor

* * *

George M. McKee, president of the Port Alfred Pulp and Paper Corporation, of Port Alfred, Que., is visiting his many friends in the New York paper industry.

* * *

Report of Albany Perforated Wrapping Paper Company for six months ended June 30, 1928, filed with New York Stock Exchange, shows net profit of $92,337 after depreciation, interest, etc., equal to 59 cents a share earned on 156,000 shares of no par common stock. Consolidated income account for six months ended June 30, 1928, follows: Gross sales, $2,337,462; costs and expenses, $2,119,257; balance, $218,205; other income, $2,546; total income, $220,751; depreciation, $46,688; interest, $81,726; net profit, $92,337.

* * *

The paper industry was well represented at the tariff discussion of the National Association of Manufacturers at the Waldorf-Astoria Hotel on October 23. Mr. Bullock (of the Import Committee of the Paper Industry) discussed the necessity of enforcing tariff legislation after the laws had been passed because the law in itself was not sufficient to insure success. The American Paper and Pulp Association was represented by C. W. Boyce, secretary of the Woodlands Section and J. A. Kavanagh, statistician. The Paperboard Industries Association was represented by Henry A. Dickie and B. J. Raeber.

* * *

Professor R. F. Reed, of the Lithographic Technical Foundation, addressed a large gathering of the members of the New York Division of the Salesmen's Association of the Paper Industry at its regular weekly luncheon and meeting, held at the Canadian Club last Monday. Professor Reed described the organization and work of the Foundation and also gave the information the Foundation's research department has obtained on the subject of paper for lithography. Some idea of the importance with which the work of the Foundation is regarded by the paper industry can be obtained from the following partial list of firms which are giving direct financial support to this project: American Writing Paper Company, Beckett Paper Company, Champion Coated Paper Company, Clarke & Co., Louis DeJonge & Co., Lowe Paper Company, Hammermill Paper Company, International Paper Company, Marquardt, Blake & Decker, Inc., W. B. Oglesby Paper Company, Oxford Miami and Oxford Paper Companies, Seaman Paper Company, Vernon Bros. & Co., West Virginia Pulp and Paper Company, and Wrenn Paper Company.

* * *

A request for additional customs employees in order to facilitate the release of imports has been made to Collector of Customs Philip Eiting by the New York Customs Brokers' Association and he has promised to seek approval of Treasury Department officials, according to a report submitted at the semi-annual dinner and business meeting of the associaion last week. A committee of brokers recently made an investigation of the customs service and as a result called the attention of Collector Eiting to what they considered the undermanning of several branches of the service. These included the cashier's office at the Custom House, where more than $1,000,000 in duties is received every day, and the baggage bureau in the same building. More employees are needed at the appraiser's stores, it was said, and the situation will be worse when the new and larger structure at Varick street is occupied by the first of the coming year. The committee working for passage by Congress of a bill compelling the licensing of customs brokers reported that the Merchants' Association will sponsor such a measure at the next session.

W. B. Bullock Speaks on the Tariff

Warren B. Bullock, manager of the Import Committee of the Paper Industry, speaking before the National Association of Manufacturers, said:

"You gentlemen are accustomed to thinking of the tariff in terms of a tariff law. Our organization, the Import Committee of the American Paper Industry, in the four years of its existence has had but one task, the enforcement of the tariff act by giving to the Government the massed resources of the paper industry in legal, technical and marketing experience.

"Our experience proves that even a satisfactory tariff law does not insure protection. The moment a tariff law is enacted the importers throw all their efforts to the finding means of evading its provisions, and securing entry of foreign goods at lower rates than those contemplated when the law was written.

"Our organization, representing a single industry, has in its four years of existence begun action upon over 3,500 cases in which there was reason to believe that the tariff law had been violated. We still have 2,000 such cases pending before the United States Customs Court. That our claims of evasion of the law are justified is shown by the fact that in over 83 per cent of the cases disposed of the decisions have been adverse to the importers.

"The one point I wish to make is that business men can not rest content with the enactment of a protective tariff. They must see that the law is not only so drawn as to give adequate protection, but that it is rigidly enforced after it is enacted.

"Any movement for tariff protection should, therefore, envisage not only the writing of properly protective schedules, but the enactment of adequate administrative provisions. Such an enforcement organization must be maintained in order that the importing interests may not be able to defeat the intent of the law by an appeal to the Customs Court.

"The paper industry has, through our organization, secured such enforcement of a tariff act as has never before been known. We have done this by such constant scrutiny of suspected importations that the importer who has tried to defraud the government of proper revenue is forced to pay the duties the law intended he should pay. I can only suggest that other industries devote at least as much attention to enforcement as they do to the initial writing of a tariff law.

"If, in the paper industry, we can stop a million dollars a year in improperly classified shipments of one grade of paper from a single country I will leave it to your imagination what the situation may be in other industries which have not taken similar steps to see that the law is being enforced."

St. Helens Gets Contract for Bag Factory

PORTLAND, Ore., October 22, 1928.—A. Guthrie & Co., Sherlock building, Portland, have received the contract from the St. Helens Pulp and Paper Company, St. Helens, Ore., for the huge building to house the new bag division of the company, which will cost $150,000. This announcement was made by Max Oberdorffer, general manager. The Guthrie firm had the contract on the big new mill for the St. Helens company which was recently completed.

The bag plant is located on the west side of the present plant. Its dimensions are 318x215 feet, of reinforced concrete and steel. Work is to start at once.

International Cuts News Print Prices

The International Paper Company makes the following announcement:

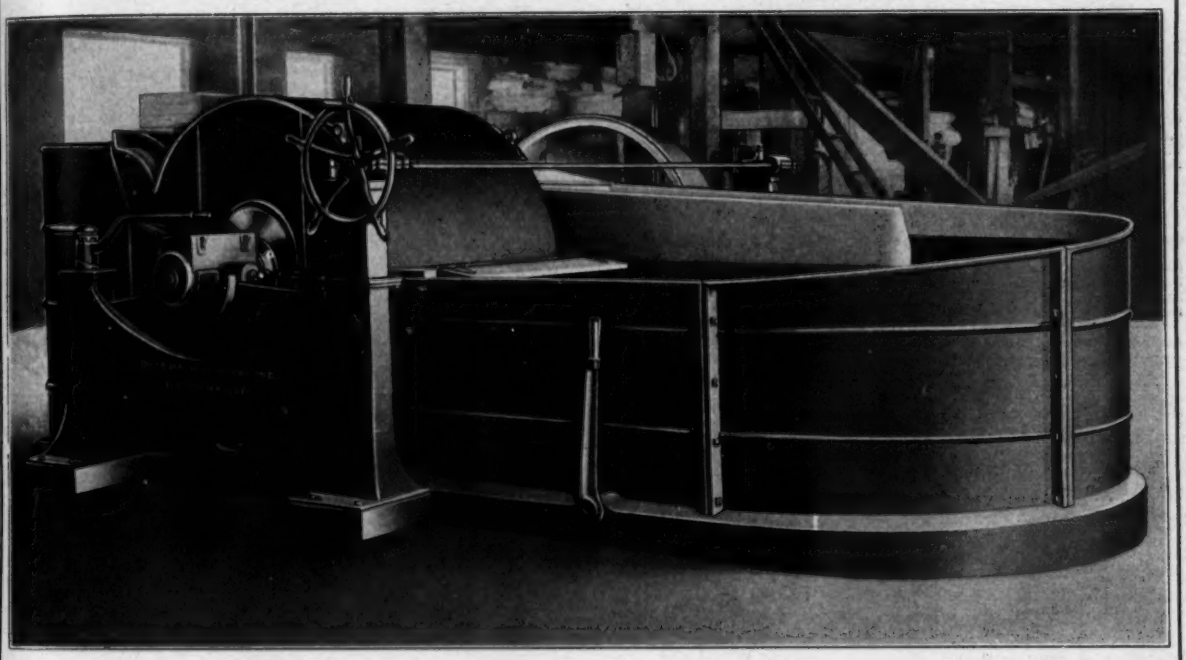
"We closed October 29 a contract for a substantial tonnage of news print for the Hearst papers for several years at prices less than our present contract prices for next year. This transaction involves no deviation from our practice of announcing standard prices, and as soon as the necessary details can be completed we will offer substantial price reductions to all our customers, including those who have already signed their contracts for next year."

"Your Paper is Made in your Beaters"

NEW TYPE

HIGH DENSITY

BETTER CIRCULATING



THE PROBLEM is "how to beat *more* stock into *better* quality with *less* cost for labor and power."

THE ANSWER is "the Dilts New Type, High Density, Better Circulating Beater, built with high tub and with the roll located toward the rear end."

We can rebuild your beaters to our NEW TYPE design.

Dilts

MACHINE WORKS, Inc. FULTON, N.Y.

EXPORT OFFICE - 15 PARK ROW - NEW YORK CITY

"Your Paper is Made in your Beaters"

PAPER AND PAPER STOCK IMPORTS AND EXPORTS OF THE UNITED STATES

For the Month Ending August 31, and for the Eight Months Ending August 31, 1928, as Compared with Corresponding Months of Previous Year

IMPORTS—PAPER

	August				Eight Months Ending August 31			
	1927		1928		1927		1928	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Paper and manufactures (total)	.....	$12,578,269	.....	$12,933,537	.....	$96,248,452	.....	$101,527,[illegible]
Printing paper—								
Standard news print....lbs...free	334,949,367	11,018,867	347,743,493	11,416,787	2,547,314,107	84,173,890	2,765,428,087	90,220,497
Imported from—								
Finland ....lbs.	6,352,871	178,384	6,544,401	165,336	43,228,247	1,226,606	47,808,082	1,252,544
Germany ....lbs.	1,640,247	49,852	1,978,520	53,285	9,680,457	307,817	11,868,238	324,317
Norway ....lbs.	2,410,466	64,170	1,098,085	27,646	23,714,376	640,013	11,072,829	285,485
Sweden ....lbs.	12,829,767	361,908	8,863,793	234,325	94,073,337	2,710,681	67,653,942	1,811,510
Canada ....lbs.	292,687,794	9,751,678	315,795,977	10,426,008	2,297,030,451	76,682,525	2,522,244,581	83,175,666
Newfoundland and Labrador....lbs.	19,028,222	612,875	13,437,716	509,425	78,812,764	2,582,714	104,091,913	3,350,936
Other countries ....lbs.	.....	.....	25,001	762	774,475	23,534	688,502	20,039
All other, n. e. s....lbs...dut.	949,994	45,248	436,453	19,239	6,886,541	344,222	5,114,601	238,398
Grease-proof and waterproof paper...lbs...dut.	89,901	15,042	103,874	21,226	1,112,420	183,280	798,250	150,168
Kraft wrapping paper ....lbs...dut.	918,663	38,648	1,825,447	78,046	6,661,487	289,330	5,844,267	249,359
All other wrapping paper ....lbs...dut.	901,062	15,992	1,505,357	48,998	3,325,150	140,712	11,828,221	270,763
Writing, letter, drawing, etc., papers..lbs...dut.	282,405	81,049	298,579	77,396	2,284,275	580,452	2,012,859	512,343
Surface coated paper ....lbs...dut.	151,684	64,679	235,344	101,238	1,485,749	595,639	1,554,590	738,448
Tissue, copying, etc., paper....lbs...dut.	209,261	139,162	284,881	141,776	2,026,742	1,160,157	2,057,068	1,264,542
Paper boards, n. e. s.—								
Pulp boards in rolls ....lbs...dut.	4,056,616	95,580	4,187,332	87,979	40,296,214	970,438	36,868,429	807,627
Paper boards, pulp board, and cardboard ....lbs...dut.	}		{1,572,865	37,271	}		{13,687,139	301,858
Leather board, test, and wall board..lbs...dut.	}	38,796	{ 33,994	1,295	}	609,123	{ 590,940	16,801
Cigarette paper, cigarette books, and covers ....lbs...dut.	1,661,854	436,016	1,178,713	315,183	11,103,025	3,276,638	8,016,820	2,169,440
Hanging paper (wall paper)....lbs...dut.	72,706	25,629	86,994	42,586	1,668,724	427,827	1,456,510	463,983
Duplex decalcomania, not printed....lbs...free	59,227	14,411	32,341	7,396	503,247	114,068	474,639	105,806
Paper boxes ....lbs...dut.	190,530	106,991	289,955	171,258	1,563,032	861,757	1,926,277	1,216,853
Pulp or papier-mâché and manufactures, n. e. s....lbs...dut.	.....	28,624	.....	32,220	.....	238,610	.....	292,312
All other paper and manufactures....dut.	.....	413,535	.....	333,643	.....	2,282,309	.....	2,508,670

WOOD PULP

Mechanically ground wood pulp....tons..free	16,604	423,526	15,387	374,476	127,443	3,652,324	139,789	3,413,817
Sulphite wood pulp ....tons	71,864	4,612,506	78,982	4,728,967	581,382	37,736,289	598,004	35,195,065
Unbleached ....tons..free	44,864	2,509,801	51,616	2,626,598	368,543	21,074,744	400,892	20,281,916
Bleached ....tons..free	27,000	2,102,705	27,366	2,102,369	212,839	16,661,545	197,112	14,913,149
Imported from—								
Finland ....tons	3,489	173,138	8,361	366,375	50,029	2,649,145	64,202	2,773,569
Germany ....tons	2,508	185,621	6,313	425,310	35,831	2,573,935	40,896	2,685,104
Norway ....tons	5,356	417,242	3,562	260,153	46,163	3,491,787	40,337	2,721,672
Sweden ....tons	28,567	1,729,971	29,119	1,602,912	198,483	12,198,769	190,254	10,409,539
Canada ....tons	29,419	1,973,990	30,046	1,989,357	226,677	15,326,716	237,692	15,229,648
Other countries ....tons	2,525	132,544	1,581	84,860	24,199	1,495,937	24,623	1,375,533
Sulphate wood pulp, unbleached (Kraft pulp) ....tons..free	29,362	1,746,605	37,206	2,064,301	197,664	12,346,166	220,938	12,363,958
Imported from—								
Finland	1,249	74,077	2,242	109,291	7,982	437,742	19,512	840,109
Norway	.....	.....	633	32,659	6,067	353,416	8,710	456,457
Sweden	15,845	884,776	21,864	1,155,520	95,409	5,790,661	98,235	5,159,775
Canada	12,171	783,201	12,275	754,757	87,357	5,710,680	91,850	5,786,923
Other countries	97	4,551	192	12,074	849	53,667	2,631	120,694
Sulphate wood pulp, bleached....tons..free	513	30,853	683	37,914	8,820	581,165	7,444	448,571
Other pulp ....tons..free	160	19,633	846	60,797	1,151	114,477	4,009	277,369

CRUDE PAPER STOCK

Rags for paper stock....lbs...free	29,909,821	569,730	43,841,140	772,822	250,142,926	5,176,412	293,393,885	5,374,783
Waste bagging, waste paper, etc....lbs...free	11,835,759	142,123	13,358,925	158,708	63,438,358	848,168	101,210,740	1,377,537
Old rope and all other paper stock...lbs...free	4,986,695	180,619	5,737,468	194,025	43,549,965	1,315,023	41,453,068	1,229,407

CHEMICALS AND OTHER PAPER MAKERS' MATERIALS

Colors, dyes, stains, color acids, and color bases, n. e. s....lbs...dut.	367,994	421,415	473,268	552,765	3,833,543	4,273,759	4,044,576	4,415,898
Imported from—								
Belgium ....lbs.	12,269	16,163	11,305	17,213	129,140	183,345	88,549	100,854
France ....lbs.	8,821	8,769	4,328	4,976	120,795	139,521	50,311	62,527
Germany ....lbs.	194,553	220,843	283,507	305,447	2,366,914	2,488,048	2,638,666	2,721,178
Italy ....lbs.	4,525	8,189	2,750	3,832	64,705	78,824	48,991	46,736
Switzerland ....lbs.	114,447	139,971	165,241	213,812	959,306	1,201,675	1,037,909	1,275,972
United Kingdom ....lbs.	17,942	20,780	1,780	1,810	120,876	120,450	74,149	66,978
Other countries ....lbs.	15,437	6,700	4,357	5,675	71,807	61,896	106,001	141,653
Casein or lactarene....lbs...dut.	1,655,752	242,033	3,252,672	385,157	19,601,945	2,477,215	21,591,640	2,797,881
Kaolin, china, and paper clay....tons..dut.	33,026	322,655	15,188	160,302	211,138	2,071,850	177,484	1,858,347

(*Continued on page 42*)

General Naval Stores Company

INCORPORATED

CINCINNATI NEW YORK NEW ORLEANS
CHICAGO PHILADELPHIA

Sales Representatives

G. W. Arthurs Co., Peoples Bank Bldg., Buffalo, N. Y.

H. T. West Co., 132 Library St., Chelsea, Boston, Mass.

N. Charter Burruss & Co. P. O. Box 99, Norfolk, Virginia

Scobell Chemical Co., Rochester, N. Y.

Marcy-Ralph Co., McCarthy Bldg., Syracuse, N. Y.

Borden & Remington Co. Providence, R. I.

Mailliard & Schmiedell, 203 California St., San Francisco, Calif.

Mailliard & Schmiedell, 947 E. Fourth St., Los Angeles, Calif.

Mailliard & Schmiedell, Colman Bldg., Seattle, Wash.

Mailliard & Schmiedell, Board of Trade Bldg., Portland, Oregon

Homer D. Butts, 1701 Keenan Bldg., Pittsburgh, Pa.

August Hoffmann, 1003 Majestic Bldg., Indianapolis, Ind.

Lewis & Culp, 1407 West Jefferson St. Louisville, Ky.

Persons Drug Company Montgomery, Alabama

Gage & Hulsey, 719 Pioneer Bldg., Birmingham, Alabama

J. H. Hinz Company, 825 Engineers Bldg., Cleveland, Ohio

Marketers of

NEWPORT and ACME WOOD ROSIN

Paper Makers have found that

Newport Wood Rosin

and

Acme Wood Rosin

are mighty good Rosins to use in Paper Making.

These are both regular FF grade from which most uniform size is most economically made.

Please direct all inquiries to any company office or nearest representative listed on this page.

Prompt and courteous replies will be given.

Best market quotations furnished on L. C. L. or carload quantities.

Many paper mill buyers specify steel drums. When so packed Newport and Acme Wood Rosin are sold on a net weight pounds price basis. Buyers enjoy this advantage.

Sales Representatives

L. J. McAnally Co., 502 L. F. M. Bldg., Knoxville, Tenn.

Wm. L. Andrews Co., 325 Fourth St., Bristol, Tennessee

Warren Bros. Co., 1146 Broad St., Nashville, Tenn.

Warren Bros. Co., 131 E. Main St., Chattanooga, Tenn.

Baker & Collinson, 6545 Georgia Ave., Detroit, Michigan

E. B. Hawkins, 511 Fulton St., West, Grand Rapids, Mich.

Homer G. Allan & Co., 5752 Etzel Ave., St. Louis, Mo.

E.L. Wilson Hdwe. Co. Beaumont, Texas

T. S. DeForest Co., Dallas, Texas

Mr. J. M. Jardy, Havana, Cuba

Valls & Repilado, Santiago De Cuba

Asarco Mercantile Co., El Paso, Texas

B. M. Hill & Co., Ltd., Winnipeg, Canada

Geo. C. Gordon Chem. 1406 W. 9th St., Kansas City, Mo.

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T. R. Jones & Co., 22 South Baltimore Ave. Wilkes-Barre, Pa.

The Oldest and Largest Organization in the World Exclusively Engaged in Selling "Steam Distilled Wood Turpentine," Pine Oil and Wood Rosin

LABORATORIES AT CINCINNATI, O., PENSACOLA, FLA., DE QUINCY, LA.

PAPER AND PAPER STOCK IMPORTS AND EXPORTS OF THE UNITED STATES

(Continued from page 40)

EXPORTS—PAPER

	August 1927 Quantity	August 1927 Value	August 1928 Quantity	August 1928 Value	Eight Months Ending August 31 1927 Quantity	Eight Months Ending August 31 1927 Value	Eight Months Ending August 31 1928 Quantity	Eight Months Ending August 31 1928 Value
Paper and manufactures (total)	.....	$2,074,319	.....	$2,748,111	.....	$18,143,518	.....	$20,543,161
Printing paper—								
News print paper ..... lbs.	2,430,928	116,872	1,946,680	76,660	19,172,361	909,814	14,812,971	568,073
Canada ..... lbs.	499,684	28,382	.....	.....	2,441,428	152,519	134,798	4,839
Central America ..... lbs.	88,882	6,917	86,477	2,783	460,248	25,044	732,630	25,764
Cuba ..... lbs.	469,486	20,323	338,842	13,290	3,761,264	171,233	2,898,591	107,016
South America ..... lbs.	494,148	20,332	463,368	18,168	4,744,763	205,692	3,820,616	143,017
China, Hong Kong, and Kwantung.. lbs.	4,000	600	413,010	15,473	335,824	20,629	1,201,475	46,106
Philippine Islands ..... lbs.	708,878	32,636	534,588	20,675	5,777,821	238,290	5,272,792	210,396
Other countries ..... lbs.	165,850	7,682	110,395	6,271	1,651,013	96,407	752,069	30,935
Book paper, not coated ..... lbs.	978,815	97,350	1,847,522	142,496	10,541,529	919,191	16,150,665	1,193,960
Europe ..... lbs.	25,839	3,138	50,873	6,251	912,876	83,758	376,977	38,320
Canada ..... lbs.	150,334	14,728	731,223	44,102	2,543,105	205,883	6,409,561	382,812
Mexico ..... lbs.	56,019	6,167	20,355	2,155	346,850	38,363	324,010	39,305
Cuba ..... lbs.	284,470	23,585	384,246	30,027	1,609,071	137,001	3,279,590	242,200
Argentina ..... lbs.	8,454	858	56,984	5,535	675,079	53,745	447,118	42,015
Other South America ..... lbs.	161,506	18,817	78,731	8,214	1,318,795	110,513	819,342	70,985
China, Hong Kong, and Kwantung.. lbs.	22,901	4,625	61,366	10,047	367,178	41,119	1,191,465	106,457
Philippine Islands ..... lbs.	106,845	8,682	240,254	15,327	1,381,926	107,041	1,540,324	104,389
Australia ..... lbs.	29,476	3,543	84,516	10,814	583,413	62,146	600,003	70,680
Other countries ..... lbs.	132,971	13,207	138,974	10,024	803,236	79,622	1,162,275	96,566
Cover paper ..... lbs.	127,712	23,296	159,476	25,956	1,056,453	186,994	1,415,953	234,209
Greaseproof and waterproof paper..... lbs.	133,669	20,370	189,011	35,031	1,799,887	255,075	2,143,395	319,209
Wrapping paper ..... lbs.	2,129,775	151,512	2,826,538	196,603	20,298,381	1,461,255	23,711,768	1,710,813
Surface-coated paper ..... lbs.	351,940	39,261	1,250,778	118,071	4,399,661	540,998	6,454,743	712,214
Tissue and crepe paper ..... lbs.	345,426	93,980	449,237	109,035	3,048,641	677,518	3,637,637	777,060
Toilet paper ..... lbs.	527,082	57,936	701,043	72,708	3,526,571	441,226	4,144,163	451,904
Paper towels and napkins ..... lbs.	222,540	30,638	377,455	46,905	1,609,170	220,039	1,979,116	252,815
Box board ..... lbs.	2,892,883	95,842	3,320,900	90,762	30,255,991	938,913	33,251,659	943,851
Bristols and bristol board ..... lbs.	95,160	11,776	225,968	24,158	1,412,731	124,874	1,328,228	146,364
Other paper board and straw board..... lbs.	2,818,202	149,120	3,735,238	172,473	28,409,788	1,546,599	26,918,993	1,320,445
Sheathing and building paper..... lbs.	951,114	41,518	1,074,220	42,611	8,830,722	352,421	8,887,282	335,291
Wall board of paper or pulp..... sq. ft.	2,883,876	91,277	5,503,021	186,054	31,798,271	1,043,094	35,924,707	1,208,580
Blotting paper ..... lbs.	298,875	33,034	301,262	35,689	2,341,696	265,632	2,711,685	309,251
Filing folders, index cards, and other office forms ..... lbs.	53,926	17,866	149,647	44,764	699,730	197,820	1,045,771	350,790
Papeteries (fancy writing paper)..... lbs.	55,594	15,730	69,537	21,286	427,837	111,265	487,432	118,575
Other writing paper ..... lbs.	1,254,347	174,863	1,938,164	203,300	8,124,093	1,242,919	15,751,489	1,807,063
Paper hangings (wall paper) ..... yds.	991,539	26,905	2,731,825	58,666	17,562,149	399,583	24,904,546	476,544
Paper bags ..... lbs.	607,136	54,056	633,099	54,587	8,028,835	682,819	5,847,250	523,229
Boxes and cartons ..... lbs.	2,465,037	163,095	2,285,953	165,417	16,003,481	1,067,415	17,430,964	1,175,232
Envelopes ..... lbs.	169,720	28,440	241,010	32,785	1,705,069	289,271	1,675,388	272,423
Vulcanized fiber sheets, strips, rods, and tubes ..... lbs.	350,530	99,431	2,360,480	366,930	3,031,712	907,467	5,612,743	1,229,572
Manufactures of vulcanized and indurated fiber ..... lbs.	45,876	12,368	46,539	9,740	356,804	101,015	391,845	111,321
Cash register and adding machine paper... lbs.	132,581	14,573	462,682	48,118	1,163,578	123,820	2,092,987	222,332
Other paper and paper products.....	.....	413,210	.....	367,306	.....	3,136,481	.....	3,772,040

WOOD PULP AND PAPER STOCK

Sulphite wood pulp ..... tons	2,454	119,686	1,603	84,967	13,442	781,329	13,694	772,592
Soda wood pulp ..... tons	107	9,631	245	20,000	1,495	132,362	1,477	117,318
Other wood pulp ..... tons	5	518	576	36,798	1,856	68,682	2,319	138,884
Rags and other paper stock..... lbs.	19,199,645	254,221	18,644,876	268,727	148,251,056	2,264,743	159,635,160	3,056,433

PAPER AND PULP MILL MACHINERY

Paper and pulp mill machinery..... lbs.	1,141,946	262,128	591,591	155,469	13,344,699	2,684,110	10,621,009	2,086,551

Cleaning Operations in Paper Mills

For over 15 years Oakite has been successfully used in paper mills for a large number of cleaning and related operations.

The operation of cleaning Fourdrinier wires or washing a felt, is unquestionably, as important as any other operation in paper making. In other words, without a clean Fourdrinier wire, or a clean felt, or a clean screen plate, it is not possible to keep production on a uniform basis. This long and successful experience of Oakite Products, Inc. in paper mills in every section of the country has been summarized in a brief but interesting brochure, the first of its kind ever published on the subject of cleaning in the paper industry.

It gives standard formulas for doing certain cleaning operations with directions for using Oakite materials. And within the confines of the 12 pages of the booklet, one gets a bird's eye view of the many different cleaning or related operations that are necessary in a paper mill, which tend to show the important part it plays in production.

This new booklet has just come off the press. A copy may be obtained gratis by applying to Oakite Products Inc., 22 Thames Street, New York.

Machinery Representative in Sweden

[FROM OUR REGULAR CORRESPONDENT]

G. Hartmanns Maskinaffar A/B of Stockholm, Sweden, have been supplying the Swedish wood pulp and paper industry with machinery, wire, felts, belts, etc., for thirty-five years and now desires to represent more American firms in the Scandinavian countries. References as to standing and integrity may be obtained from the Union Screen Plate Company of Fitchburg, Mass., and the Valley Iron Works of Appleton, Wis.

It's the champion who has the stiffest handicap

A CHANCE shot or a stroke of luck might possibly bring a championship. It is not always the best-equipped contender who reaches the top. The difficulty is in remaining there.

As contestants improve, the game speeds up. All strive for top form when facing the champion. The wearer of the laurel wreath has no soft road. Under the pitiless glare of publicity he must always be at the peak of his game.

For twenty-five years Condor Belt has been the standard of belt comparison. It was the first red friction surface belt. Constantly improved through enlightening experience, but never radically changed, Condor Belt has continually dominated the belt field.

If you have not as yet used Condor Belt, one installation will gain your admiration and respect.

Condor BELT

THE MANHATTAN RUBBER MANUFACTURING CO.

Executive Offices and Factories : : : PASSAIC, NEW JERSEY

Branches in the Principal Cities

PAPER TRADE JOURNAL
ESTABLISHED 1872

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Vol. LXXXVII New York, November 1, 1928 No. 18

PAPER EXPORTS INCREASE

Exports of paper and paper products from the United States during August show a slight increase over July and exceed the August, 1927, shipments by about 32 per cent, according to the Paper Division of the Department of Commerce.

There were considerable increases in the volume of shipments of fine papers and paper specialties as compared with both August, 1927, and July of this year. An exception was greaseproof paper, which showed a decrease in shipments under July, 1928, of about 59 per cent, but at the same time an increase of 41 per cent over the corresponding month last year. Exports of book paper registered an increase of 88 per cent over the same month a year ago and a decrease in shipments of about 9 per cent under July, 1928. Outgoing shipments of writing paper showed an increase of 54 per cent over August, 1927, and about 6 per cent over July, 1928. Hanging paper exports show a considerable increase as compared with both the same month last year and July, 1928.

Exports of news print paper fell off to the extent of 19 per cent compared with August, 1927, and 21 per cent over July of this year. Boxboard exports increased 14 per cent over August, 1927, and decreased 27 per cent under July, 1928. Paper board and straw board exports increased 32 per cent over the corresponding month a year ago and were practically the same for the previous month of this year. An increase of 12 per cent in outgoing shipments of sheathing and building paper was indicated as compared with August, 1927, and a decrease of 25 per cent compared with July, 1928. Exports of wall board show an increase of about 90 per cent over August, 1927, and were about 21 per cent higher than July of this year.

Wrapping paper shows a 32 per cent gain over the corresponding month last year and an 8 per cent decrease under July, 1928. Shipments of paper bags registered a small increase over August, 1927, and decreased 32 per cent under July, 1928. Exports of boxes and cartons declined about 7 per cent under August, 1927, registering an increase of 9 per cent over July of this year.

Total exports of paper and paper products during August were valued at $2,748,111 as compared with $2,519,856 during July, and $2,074,319 during the corresponding month last year.

In addition to paper and paper products, $414,300 worth of paper base stocks were shipped from the United States during August. Similar exports during the same month in 1927 were valued at $392,496 and during July at $617,563. The largest item in this group is rags and other stock, exclusive of wood pulp and pulp wood. These shipments amounted during August to 18,644,876 tons valued at $268,727.

Imports of paper and paper products during August registered a slight increase in comparison with the preceding month, and exceeded the receipts of the corresponding month in 1927, by about 2 per cent.

There was a gain of about three per cent in standard news print receipts, which make up the bulk of the incoming shipments in this group, in comparison with August, 1927. The July receipts were slightly in excess of both August of this and August a year ago. Arrivals of other classes of paper, which reached an aggregate value of $1,516,750, increased about 7 per cent over July, and decreased about 2 per cent under the corresponding month in 1927. Imports of miscellaneous wrapping paper show 1,505,357 pounds for August of this year and 901,062 pounds for the corresponding month last year and for July, 1928, 1,261,416 pounds. Receipts during August of kraft wrapping papers, and pulp boards in rolls also exceeded July receipts, while greaseproof paper and miscellaneous printings showed a considerable decrease. With the exception of miscellaneous printings, however, imports of all of these items were larger than during August of last year. Imports of wall papers and paper boxes show a notable increase over the same month last year, July imports of these two items showing a slight increase over August, 1928. Cigarette papers and duplex decalcomanias show considerable decreases compared with August, 1927, and there was also a considerable decrease in the July imports of cigarette papers under August, 1928, and a very substantial increase in shipments of duplex decalcomanias in July over August, 1928.

Total arrivals in this group during August were valued at $12,933,537 as against $12,649,377 in July, and $12,578,629 in August, 1927.

Imports of paper base stocks also decreased during August as compared with the preceding month, but at the same time registered a considerable increase in value over August, 1927, receipts.

Imports of pulpwood during August, amounting to 166,098 cords, 202,673 cords for July, and 213,374 cords for August, 1927. Imports of wood pulp were: August, 1928, 133,104 tons—August, 1927, 118,503 tons, and for July, 1928, 129,617. There was an increase in the various sorts of waste stock as compared with August, 1927, and the previous month of this year. Total receipts in this group during August were valued at $10,231,395, as against $10,367,495 in July, and $10,126,405 in August, 1927.

POWER SHOW DECEMBER 3 TO 8

The widening field of power and mechanical engineering has spread out until it touches every corner of the civilized world, easing the labors of man, woman and child and providing necessities and luxuries for us all.

The remarkable strides that have been made in this field surpass anything visualized a century ago by the great men of their day and the tremendous natural resources that have been developed through engineering practices. Realizing that the only possible

way to keep abreast of such an advance, some seven years ago the first Exposition of Power and Mechanical Engineering was held in New York and each year it has increased in size and scope until the Seventh National Exposition of Power and Mechanical Engineering bids fair to surpass all others.

Until recently practically the only engineering and industrial expositions were either purely local or else lost in such expositions as the Centennial, Chicago World's Fair, Buffalo Exposition, St. Louis Fair and a few attempts by men of vision who lacked either support or confidence of the engineering industry. The past is filled with failures of such expositions and it took wide vision and diplomatic effort on the part of the present organization heads to build up such confidence and support from the engineering profession.

This year the application from foreign countries for tickets and information exceeds by far any past Exposition. To date over 2,000 requests have been received from consulting and industrial engineers for invitations. A most interesting fact this year has been the number of requests for information and invitations by financial institutions which are beginning to realize that the interest on money invested can only be secured through first hand knowledge of industry from the engineering side. The financial world realizes that without such understanding, invested capital cannot be assured of an adequate return. Many great industrial corporations today do their own financing, but this could not have materialized had not the engineer lent his vision to the operation of such corporations. In order to accomplish such achievements, the engineer must be familiar with all equipment and the functions of each unit from a standpoint of economy as well as efficiency.

Nowhere else can engineers and executives make such close contacts and visualize the operation of the equipment which is of vital importance to them as at the Seventh National Exposition of Power and Mechanical Engineering at the Grand Central Palace, New York City, December 3 to 8, 1928. The opportunities for comparison of products, material and finally selecting the most adaptable to the particular need can be accomplished nowhere else.

Exhibitors have been quick to realize and grasp the advantages of such contacts and a continuous endeavor to cement such contacts into sales of their products. Realizing that confidence in their products plus the opportunity afforded through such a medium the exhibitors strive yearly to maintain a high standard of product which comes under the eyes of the visiting engineer and executive.

The American Society of Mechanical Engineers, the American Society of Refrigerating Engineers, and the American Institute of Chemical Engineers all convene during the Exposition week and visit the Show.

May Sell South Glens Falls Mill

GLENS FALLS, N. Y., October 31, 1928.—It was currently reported here this week that negotiations were under way for the sale of the South Glens Falls Mill of the International Paper Company to the General Electric Company to be used for manufacturing electric refrigerators. H. R. Williams, manager of the South Glens Falls mill, would neither affirm or deny that the plant was to be sold. The mill is now operated by the Veldown Corporation, a division of the International Paper Company, producing Veldown, a cellucotton fabric. The mill was formerly a news print paper plant and years ago was one of the largest mills operated by the International Paper Company.

Paper Production Increases

Paper production in August totaled 608,852 tons as compared with 532,624 tons in July and 581,792 tons in June, according to reports to the American Paper and Pulp Association from members and cooperating organizations. August production was about 14 per cent above July and 4 per cent above June. The rate of production in August was 83 per cent as compared with 78 per cent in July.

The August daily average paper production was 5 per cent higher than July and 2 per cent higher than the August, 1927, daily average. News print and felts and building papers were the only individual grades to show a decrease in daily average production as compared with July.

The total eight months' paper production to date was 4,647,805 tons as compared with 4,521,798 tons in the same period last year, an increase of about 3 per cent. Shipments for the first eight months of 1928 totaled 4,599,072 tons as compared with 4,482,532 tons during the first eight months of 1927. Stocks on hand at the end of August, 1928, totaled 290,001 tons as compared with 267,335 tons at the end of August, 1927.

Wood pulp production in August totaled 200,627 tons as compared with 186,615 tons in July and 209,797 tons in June. Production was at the rate of about 78 per cent of capacity. August was the first month to show an increase over the corresponding month in 1927 since February, 1928.

The total production for the first eight months of 1928 was 1,677,511 tons as compared with 1,708,648 tons, according to the identical mill reports to the American Paper and Pulp Association.

COMPARATIVE REPORT OF PAPER OPERATIONS IN IDENTICAL MILLS FOR THE MONTH OF AUGUST, 1928

Grades	Production tons	Shipments tons	Stocks on hand end of month tons
News print	115,940	114,539	40,838
Book	96,487	98,423	56,370
Paper board	235,828	236,097	50,432
Wrapping	56,980	56,746	52,937
Bag	16,216	16,079	9,400
Writing	31,465	31,162	42,828
Tissue	14,783	15,190	13,397
Hanging	5,272	5,156	4,454
Felts and building	10,243	10,080	2,195
Other grades	25,638	24,609	17,663
Total—All grades, August	608,852	608,081	290,514
July	532,624	539,796	290,556
Eight months, 1928	4,647,805	4,599,072	290,001
Eight months, 1927	4,521,798	4,482,532	267,335

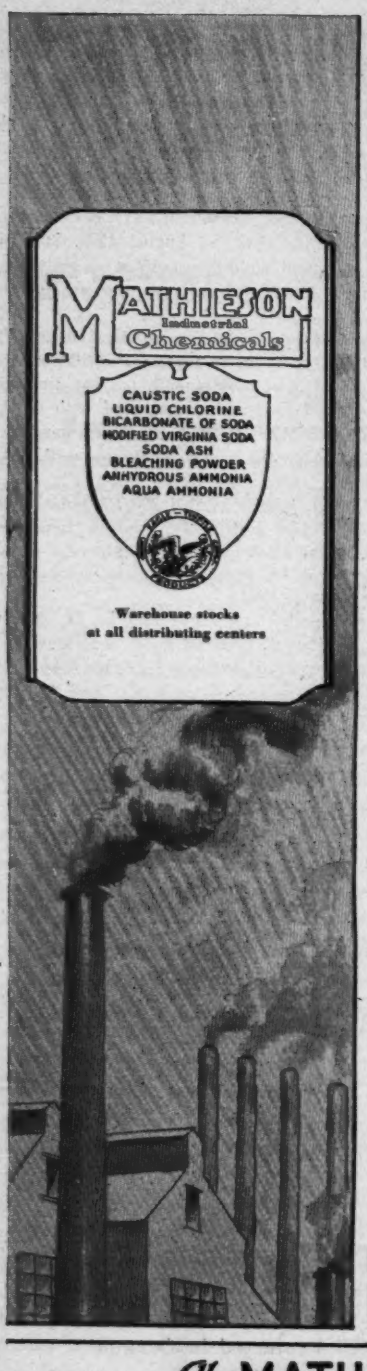
COMPARATIVE REPORT OF WOOD PULP OPERATIONS IN IDENTICAL MILLS FOR THE MONTH OF AUGUST, 1928

Grade	Production tons	Used during month tons	Shipped during month tons	Stocks on hand end of month tons
Ground wood	75,842	87,375	3,467	96,214
Sulphite, news grade	39,771	38,862	1,775	8,806
Sulphite, bleached	25,440	22,701	2,226	3,300
Sulphite, easy bleaching	3,241	2,914	278	615
Sulphite, Mitscherlich	7,211	6,101	1,148	1,506
Sulphate pulp	25,134	20,056	5,055	5,837
Soda pulp	23,932	14,661	8,254	5,299
Pulp—Other grades	56	.....	48	123
Total—All grades, August	200,627	192,670	22,251	121,700
July	186,615	173,633	23,482	136,057
Eight months, 1928	1,677,511	1,504,598	180,637	121,700
Eight months, 1927	1,708,648	1,559,275	158,900	155,198

New Mill Projected in Oregon

Another large paper mill for Oregon is in prospect in the region of Tillamook, it has been announced by business men of Tillamook County. A plant to employ 150 men to be constructed at an initial cost of $1,250,000, will go in on the shore of Tillamook Bay within a year if an option on a billion feet of pulp timber can be obtained.

Officials who would back the project, but who as yet are not ready to have their names announced, say that financial support is in sight. As planned the mill will be built for an output of 50 tons, but when completed an output of 100 tons is considered. Logging for the paper mill is not intended to interfere with other large logging operations in the district, as the mill will use a different quality of timber.



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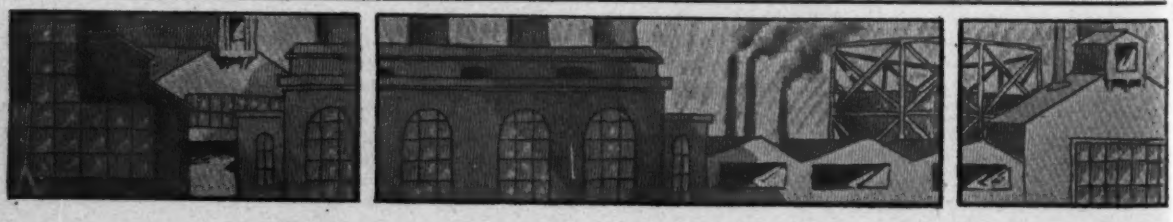


Section of the
Technical Association of the Pulp and Paper Industry

AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Edited by
RONALD G. MACDONALD, Secretary

Corrosion of Piping in Paper Mills*

G. R. Wyman [1]

Corrosion has been defined as "an eating or wearing away gradual decay". However, in this discussion it is considered as a chemical change in a material which tends to destroy its value. Wearing away of material due to abrasion is considered as erosion. The effects of corrosion in piping in paper mills and the losses involved are so well known that there is no need of discussing them, but means preventing this waste are of vital interest because where piping corrosion is active it follows that there is also corrosion of much more valuable equipment.

In general, prevention of corrosion of piping may be accomplished by: a. Removing the corrosive agent in the material being handled. b. Protecting the piping with a coating with which the corrosive agent does not react, or c. By using a material in the piping which reduces or eliminates corrosion.

Selection of the best method of corrosion prevention is a problem requiring determination of the nature of the corrosive agent. In each case the economics of the problem must be considered.

Piping corrosion may be classified as that occurring on the interior surface of the piping and that occurring on the exterior surface of the piping. A brief discussion of each is given below.

Interior corrosion of piping naturally depends on the character of the material being conveyed. The principal materials being handled by piping in paper mills and some of the methods used in prevention of corrosion are as follows:

Corrosion of piping handling these liquids is principally due to free oxygen. There are many cases of make up water for boiler feed containing impurities such as acids, alkali and salts which are quite destructive. However, with the careful investigation and follow-up of water for boilers which is usually made, and the general employment of water treating equipment, this source of corrosion is becoming less troublesome. Detection of oxygen in water is less general, yet there are many cases of very rapid destruction of steel piping due to the presence of this element.

One of the common means of oxygen removal is de-aeration of the water in feed water heaters. In some cases steel wire, band iron, sheet iron scrap, etc., is placed in heaters, this material being oxidized, thereby absorbing the oxygen in the water. By this means, corrosion of valuable piping and boilers is reduced or eliminated at the expense of destroying less valuable material.

The use of brass and iron piping for feed water and condensate is quite general; however, elimination of the corrosive agent is most essential because of the necessity of protecting boiler equipment.

Corrosion of steam piping is seldom serious, although there are cases on record where great damage has occurred in a very short time. The elements which affect corrosion are water and impurities in feed water carried over usually when priming exists in boilers. With properly treated feed water and satisfactory separators and drainage systems on piping, there is very little corrosion of steel pipe.

With increasing water pollution resulting from discharge of industrial wastes and sewage into rivers and streams; corrosion of mill water supply piping is greatly augmented. Removal of impurities in water is becoming more necessary for proper process work, and filters, settling systems and water treating plants are becoming more general. However, the large quantities of water usually required in paper mills are difficult to treat and until these systems are made more effective, the obvious method of prevention of corrosion is to use a material in the piping which is not readily affected by the active agent in the water. Cast iron or wrought iron piping are the most suitable materials.

Most paper stuff contains corrosive material of some nature, it being present in the stock used in water with varying concentration. Stock for board and felt mills contains an appreciable amount of foreign material, some of which may be corrosive. Pulps, insufficiently washed, are sources of active agents which may induce corrosion.

Corrosion of stuff piping is more readily prevented by the proper choice of material in the piping. Among materials used may be mentioned the following: cast or wrought iron, stainless steel, copper, brass, aluminum, wood, fibre, rubber, lead, monel, tile, etc.

Protection of piping from corrosion of chemicals is a matter of selecting piping material which will not react readily with the liquid or vapor being handled.

There are two conditions where exterior pipe corrosion is quite active. In certain sections of paper mills, vapors from chemicals used in process work, such as SO_2, chlorine and various acids, form active agents in attacking the piping. The humid atmosphere existing throughout a mill is a cause of corrosion, particularly if the temperature of the piping is below the dew point of the surrounding atmosphere.

In some cases it may be advisable to select materials which do not react with the agent promoting corrosion; however, providing a protective coating for the piping is usually sufficient. Some of the coatings used are—zinc (by galvanizing), paint, prepared rust preventives, asphalt compounds, woven or moulded coverings.

* Presented at Fall Meeting of TAPPI, Wausau, Wis., Sept. 26, 1928.
[1] Member TAPPI; Manufacturing Manager, Bird & Son, East Walpole, Mass.

Preparation of Cellulose from Agricultural By-Products by the Chlorine Process*

By Umberto Pomilio[1]

It gives me pleasure to discuss before the Institute of Chemistry the manufacture of paper pulp from agricultural by-products. The ideas which I present at this time have matured in the ten years that I have been working in and following the developments in the cellulose industry. This program of the use of the residual and waste products of agriculture for the production of cellulose has led me to repeat many times that the future (and what a future it is) of the cellulose industry must needs look for its raw material in the use of straws such as those of wheat, oats and flax or in the waste stalks of corn, sugar cane, hemp and similar agricultural by-products.

AERIAL VIEW OF THE POMILIO PLANT

The chemists of America must be made to realize that wood will soon have as a competitor for the supply of cellulose a new source of the materials in the agricultural by-products. Americans are known the world over for their ability to turn to practical uses materials which others have overlooked. In this case a modest European industry is already realizing success in this field. Accordingly, I welcome the occasion and invitation extended to me to contribute to this gathering and to communicate those facts which in my belief are of value in a discussion of this subject. In this discussion I shall strictly limit myself to those things in which I have had personal experience in the years since the Great War.

Future Raw Materials for Paper

In the development of the cellulose industry the world must look in the future to the utilization of annual plants, and particularly to those whose stalks are agricultural by-products. Preferably, these should be those grown in great quantities on relatively small area, and the treatment of these materials should be relatively inexpensive both in chemicals and labor. Moreover, the ideal would be to furnish a cellulose of an acceptable high quality.

One must not forget that the straw from wheat or from flax and corn stalks are available in extensive regions in both North and South America, and that the gathering of these raw materials is incidental to the gathering of the grains for which they are grown; further, that in large areas these straws and stalks are now abandoned or burned locally. We have found that by proper simple treatment we can produce a cellulose entirely satisfactory for many uses. The last numbers of Industrial and Engineering Chemistry at my disposal, May and June, 1928, contain the first two of a series of three interesting articles by Rommel on cellulose resources. Moreover, the short editorial note that precedes the first article is of particular interest to me in that it summarizes the many points which I included in an article in the Journal of the Society of Chemical Industry of London ("Industrial Researches on the Production of Pure Cellulose—Qualitative Aspects of the Industrial Problems of Cellulose," January, 1928). I am convinced not only that the future of the cellulose industry rests upon the use of wheat, and other straws, but also that for such raw materials the preferable method for the manufacture of cellulose is one in which the straw is treated with chlorine gas. The method might in greater exactness be defined as a method of alkali-chlorine-alkali-hypochlorite treatment. This conclusion is arrived at after years of personal industrial experience on a large scale using the chlorine gas method.

Surplus of Chlorine Supply In Italy

It may be useful if I explain how I was led to the adoption of the chlorine gas method. At the end of the World War I was in charge of an industrial concern which was producing chlorine gas for the Allied armies. My country, Italy, found itself with five such plants instead of the two pre-war plants and with the productive capacity of these five plants more than four times the pre-war capacity. Moreover, we were facing a post-war business stagnation wherein the requirements for chlorine gas for commercial use were less than they had been previous to the war. The problem was presented, therefore, of finding an outlet for large quantities of chlorine gas and for a portion of the alkali produced simultaneously in the electrolytic process of making chlorine. In an early discussion of this (Giornale di Chimica Industriale ed Applicata, Milan, October 1921; Journal No. 10, Congresso Nazionale di Chimica, Rome, June, 1923). I remember having laid down the basic conditions of the problem: the use of chlorine gas in large quantities to produce a material salable in large quantities; also, it must be capable of using chlorine gas at a price not excessively low but comparable to the price of chlorine for other well known uses.

Process of B. Cataldi

Cellulose is used in the world markets for the manufacture of paper to the extent of thousands of tons annually. The manufacture of cellulose by the use of chlorine gas requires about 50 per cent of its own weight of chlorine, and the product is salable at remunerative prices. Cellulose has been thus manufactured in our plant at Naples, using a modified process developed by the late chemist, B. Cataldi, whose residence was in north Italy.

Italy is poor in forests and is an importer of its basic materials for the production of paper. The utilization of the agricultural waste products appeared as a desirable, logical solution of the country's needs in this direction. The process has been employed in Naples for a number of years and has used successfully canapulo (the stalks of hemp after the rope fiber has been removed), wheat straw and Tripolitan esparto grass. From hemp there were obtained thousands of tons of high grade white paper pulp. However, the difficulty of compressing and baling hemp stalks and also the fact that the fibers are short and thick and not particularly desired by the paper manufacturers brought about a change to the use of straw and esparto as raw materials.

* Paper presented before Institute of Chemistry, Evanston, Ill., August, 1928. Translation revised by R. H. McKee, Member TAPPI, Columbia University, New York.

[1] Naples, Italy.

Paper manufacturers, with notable exceptions, are among the more conservative and less progressive industrialists. At least they are in Europe. They hesitate to make a change which varies the methods of manufacture or handling of labor.

The wheat straw of southern Italy by the soda-chlorine process has furnished us with thousands of tons of very fine cellulose adapted particularly to the production of a good grade of writing paper.

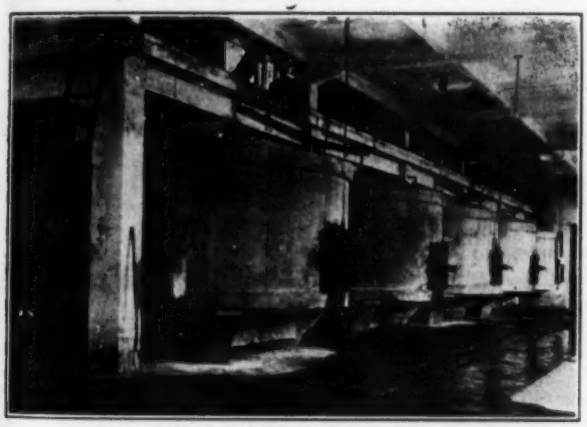
Due to the necessity of transporting this straw approximately two hundred miles with corresponding high freight rates and due to the not inconsequential value of the straw itself we have been led to use esparto grass. In Italy due to the limited quantity of straw and similar forage available straw finds use as food for animals. Esparto grass is present over large areas of the North African territories.[2]

During the last few years we have used largely esparto grass and the cellulose obtained from it has been very much in demand due to the fine quality of the resulting paper. There is a ready market for this fine pulp, especially in England, where they have been using esparto pulp for many years. Esparto pulp by the chlorine gas process was successfully used by the "Soie de Chatillon" for artificial silk production, although tests were carried out on a semi-industrial scale only. Any chlorine prepared pulp can be used for rayon manufacture.

Our ten years experience in the Naples factory have shown us that the method using chlorine gas is perfectly adapted for handling flax straw, rice straw and corn stalks, as well as the other types of raw materials previously mentioned.

Economic Factors Relating to Pulp Raw Materials

The reluctance to use annual plants as base materials for the production of cellulose for paper is largely due to the numerous problems connected with gathering, organization, cost per ton,



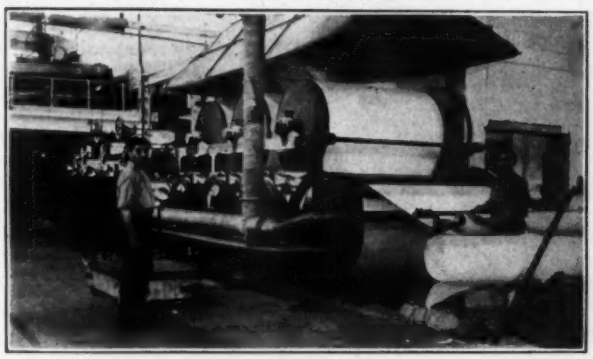
Chlorinating Chambers Used for Straw at Naples

necessary modification in manufacturing plants and the physical characteristics of the cellulose fiber obtained (length of fiber, resistance, opaqueness, etc.). For these differences of composition and properties I would refer you to my article in the Journal of the Society of Chemical Industry. There are, of course, certain difficulties which exist in the utilization of straw, particularly the expense of gathering, of baling and of transportation. Of course these are not insurmountable, especially in those cases where the utilization of such straws possesses special advantage.

Many people are inclined to think that collecting and transporting bulky materials, such as wheat straw, results in so great a cost as to prohibit in most cases their utilization in the pulp industry. However, if we take Rommel's data on the average grain and straw production per acre, in the United States (2,500 lbs. of grain and 3,500 lbs. of wheat straw, etc.) it is easy to calculate that a few square miles of wheat growing territory may furnish the yearly requirements of a medium sized pulp plant. Should the plant be erected in the immediate neighborhood of the straw supply, the transportation problem would then be reduced to a very modest one. To answer the question in figures, we may state that on the average a 50 tons daily wheat straw pulp plant would require a maximum of 50 square miles of wheat-growing territory for its straw supply for the whole year. It must not be forgotten that straws grow annually, while wood does not.

In the choice of plants for cellulose production the basic conditions for industrial utilization are:

1) There must be an adequate amount of the material available.
2) The growth must be intensive and cover large areas.



Wheat Straw Pulp Drying at Pomilio Plant

3) The material must be easy to gather, bale and transport.
4) In the plant we must have ease of treatment, both from the mechanical side and from the chemical side.
5) The resulting pulp must be obtained at not too great an expenditure of chemicals.
6) The pulp must be of good quality, both morphologically and chemically.

I must confess that of the more than one hundred plants which we have examined not more than ten of them fulfill all or almost all of these requirements, but I must add that there are certain localities where it should be possible to create a great cellulose industry utilizing those vegetative annual plants which would answer affirmatively the majority of the above requirements. Many of these places are in the United States, and without hesitation we should consider the handling by this method of wheat straw, flax straw and corn stalks.

The industrial treatment of straw by the chlorine gas method (for details of which I refer you to the previous publications of my collaborators and myself since the year 1921) requires knowledge of the handling of caustic soda and chlorine on the one hand and of straw and cellulose on the other. Facing it in 1920, from our experience in Naples it seems to us that the knowledge of the caustic soda-chlorine process was the more important. Experience has taught us that the details of the wood pulp industry are diverse and the process delicate, especially the preparation of mechanical pulp. However, due to our experience with various fibers we are able today to state that the utilization of certain agricultural by-product straws for the production of cellulose is entirely realizable and can supplant to a great extent the consumption of wood, especially woods of slow growth.

Caustic Soda—Chlorine Process for Straw

The paper manufacturer requires, when using short fibers such as the cellulose obtained from straw, that this cellulose have a high degree of purity. This can be attained only at the expense of scrupulous cleanliness in the manufacturing plant, careful handling of the straw to get rid of attached dirt, and then finally an intense chemical treatment to give the cellulose wished. The well-known bisulfite method is not generally satisfactory with such materials,

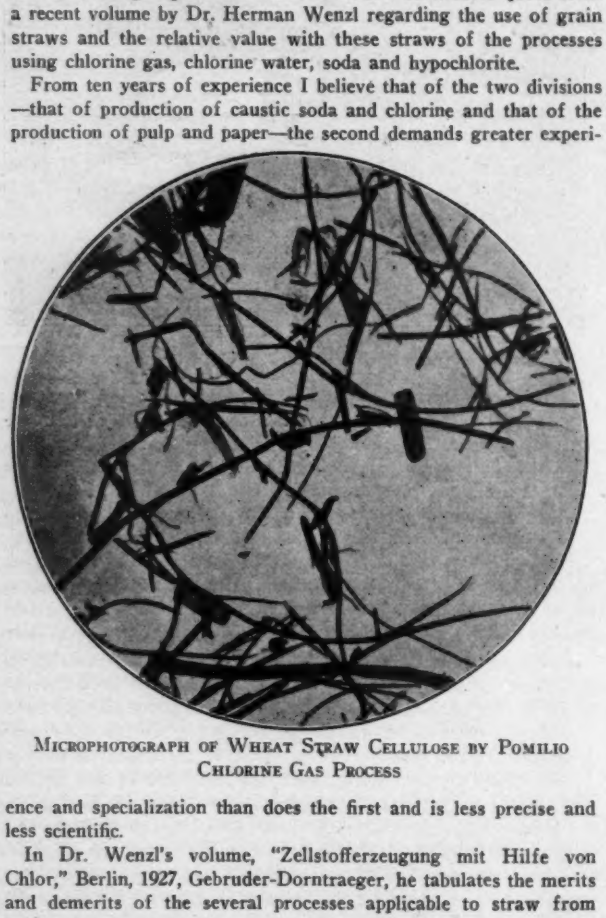
[2] For details regarding esparto, I would refer you to the article by Professor Levi in Volume II of the Proceedings of the Congress of Pure and Applied Chemistry, Palermo. 1926.

nor is the sulfate better in that the need is for a good white fiber. Of the customary procedures there remains only the customary soda process treatment. The chlorine process is a modification of the old soda process but it is not so readily adapted to wood as is the soda process.

Sometimes the chlorine gas process is confused with that using an aqueous solution of chlorine, but this chlorine solution method is not really a process of delignification but rather a process of oxidation and bleaching of the fibers, and it has the disadvantage of giving only a low yield of pulp. Chlorine gas, on the other hand, acts not as an oxidizing agent but as a chlorination agent. (See Chimie et Industrie, Paris, July, 1922, March, 1924, and June, 1924.)

I have discussed elsewhere[3] the mechanism of the reactions occurring in the chlorine gas process. Accordingly, I shall here refrain from going over this material but I do wish to quote from a recent volume by Dr. Herman Wenzl regarding the use of grain straws and the relative value with these straws of the processes using chlorine gas, chlorine water, soda and hypochlorite.

From ten years of experience I believe that of the two divisions —that of production of caustic soda and chlorine and that of the production of pulp and paper—the second demands greater experi-



MICROPHOTOGRAPH OF WHEAT STRAW CELLULOSE BY POMILIO CHLORINE GAS PROCESS

ence and specialization than does the first and is less precise and less scientific.

In Dr. Wenzl's volume, "Zellstofferzeugung mit Hilfe von Chlor," Berlin, 1927, Gebruder-Dorntraeger, he tabulates the merits and demerits of the several processes applicable to straw from grain:

STRAWS FROM GRAIN
Consumption of reagents and yields.

	Process With—			
	Hypochlorite	Chlorine Gas	Chlorine Water	Caustic Soda
Amount of caustic soda used as compared with the cellulose produced	15.35%	13.95%	24.6%	26.8%
Amount of chlorine used as compared with cellulose produced	40.8	51.7	53.5	3.0
Yield on straw taken (dried under atmospheric conditions)	45.0	48.0	28.0	41.0
Yield on cellulose in the straw	65.4	76.5	43.3	58.3

In spite of the advantages of the chlorine process as shown by yield and superior quality of the cellulose obtained, and in spite of the fact that it is particularly adaptable to the straw of cereals, some manufacturers object to it because it involves the use of a corrosive gas and a somewhat complex treatment.

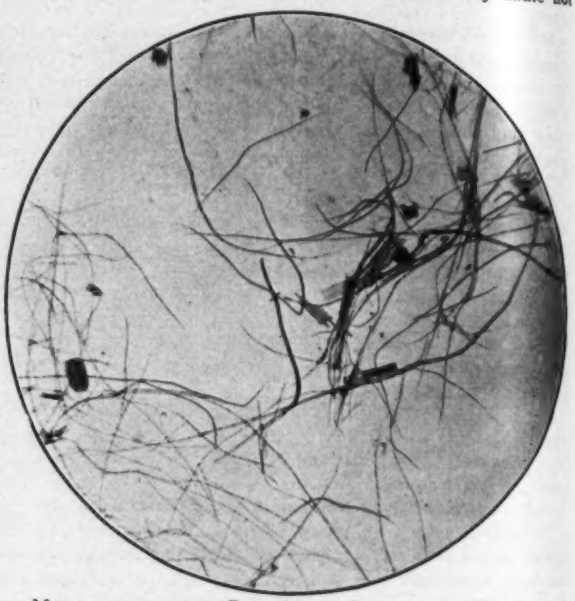
[3] Le Papier, Grenoble, February and June, 1924; Wochenblatt fur Papier-Fabrikation, Biberach, No. 37, September, 1925.

It is not necessary to state to the chemists of America that the technique of production of chlorine has made such advances that this industry is no longer to be considered as particularly dangerous.

Chlorine Process Outlined

The procedure used as I have shown on other occasions is:

a) An alkaline treatment of the straw with very dilute hot



MICROPHOTOGRAPH OF RICE STRAW CELLULOSE BY POMILIO CHLORINE GAS PROCESS

alkali but in an open container and for but a short period.

b) A treatment with chlorine gas in the cold.

c) A washing in the cold with very dilute alkali.

These three steps are in practice preceded by a treatment with hot water in order to remove dust, dirt, etc. The process as a whole is evidently less simple than the single digestion process of the ordinary soda alkali process or of the bisulfite process for wood.

From the chemical point of view, however, the chlorine process is closely parallel to that nearly chemically perfect method advocated by the two masters and founders of cellulose knowledge, Cross and Bevan. From the mechanical point of view, however, the number of operations is larger, but work under pressure is eliminated. The treatment is performed in simple apparatus and in the cold, and any complex method of recovery of solutions is entirely eliminated.

Production figures

The process permits of great elasticity as regards proportions of alkali and chlorine used. I wish to quote from the Wochenblatt fur Papier-Fabrikation, September, 1925, regarding the consumption of alkali and chlorine when using the wheat straw and rice straw. The amounts given are percentages by weight referred to air-dried pulp.

WHEAT STRAW

Concentration of NaOH solution—Per Cent	2.25	1.5	1.1	1	0.5
a) Consumption of soda	19.8	20.3	18.7	17.1	11.3
b) Consumption of Chlorine	40.0	40.8	33.6	42.8	69.1
c) Cellulose yield	42.0	38.5	39.0	40.8	40.8

RICE STRAW

Concentration of NaOH solution—Per Cent	1.5	1	0.5	0.25
a) Consumption of soda	22.0	21.8	15.4	12.9
b) Consumption of chlorine	19.8	18.0	44.4	83.9
c) Cellulose yield	35.0	38.9	32.4	31.7

The above figures also correspond to those we have found in our factory at Naples, and we have also found that we can change still more the relation between the consumption of caustic soda and the consumption of chlorine gas. For example, above 3 per

cent caustic soda solution the consumption of alkali would be greater by weight than that of chlorine.

The chlorine gas pulp method corresponds closely to the American ideal of self-containment, the ideal that forms the guide of so many American industries. The energy used is mostly electrical, little coal being required. For a metric ton (2240 pounds) of pulp dried under atmospheric conditions (10 per cent moisture), the following materials are required:

Straw	About 5,000 lbs.
Salt	About 1,000 lbs.
Energy: direct current	1,200 kw.
Energy: alternating current	200 kw.
Steam, low pressure, for cooking	About 1,500 lbs.
Steam, low pressure, for drying	About 5,000 lbs.

The above data is based upon industrial experience. The consumption of salt is based on the use of a caustic soda solution which does not contain appreciable quantities of sodium chloride. However, it is just about double if saline cathodic solutions are used. It might be an advantage to produce the caustic soda by means of mercury cells but if salt is cheap it is best to use saline cathodic liquors.

The concentration of diaphragm cells cathodic liquors may be of advantage, should the price of coal favorably compare with price of salt. Concentration need not be pushed up to a nearly saltless alkaline solution, that is up to 50 degrees Bé. density, it may on the contrary be of advantage, for instance, to a reach only a 36 degrees Bé. concentration. In that way from a cathodic liquor of say 120 grams of caustic soda and 160 grams of NaCl per liter, a 380 grams caustic soda and 70 grams sodium chloride per liter of liquor may be obtained, saving in that way the greatest part of the salt and avoiding the second or final step of concentration, which is the more difficult and expensive step. It must not be forgotten in discussing mercury versus diaphragm cells, that the former in supplying a saltless and more concentrated caustic soda solution, require a higher voltage, for their operation, so that the energy yield of mercury cells is generally 15 to 20 per cent less than in the case of diaphragm cells; and this apart from the much higher instalment cost and floor space of mercury cells. It is not rare, therefore, to find that a more economic production of a 36 degrees Bé. caustic soda solution can be made from diaphragm cells and evaporatiors than a 32 Bé. NaOH solution obtained directly from mercury cells.

Relative to labor, the chlorine gas process necessitates a somewhat greater personnel for the electrical and electrolytic plants but it is well known that for a medium-sized plant two workers per shift in each one of these departments will suffice to give a large, steady production. The maintenance of electrolytic cells demands a daily squad on a single shift of perhaps four men. In comparison, the straw does not demand as does wood the cutting, trimming and chipping of the wood. Many agricultural machines now furnish straw to the baling presses in such a form that it can be used without further cleaning. Some have mentioned the difficulties due to the excessive volume of the straw in handling and transportation. Few or none have called attention to the great advantage in having these materials in a usable state without the need of cutting, sieving out of knots and nodes, trimming or chipping. The chlorine process renders superfluous the elimination of the nodes of straw as they are not left in the finished pulp.

It is undeniable that electric energy is the predominant cost factor in the chlorine process. Hence the choice of a locality is based not only on the availability and cost of the straw but also on the possibility of obtaining electricity at low cost.

Hydroelectric energy evidently can be used to great advantage but numerous localities are not excluded where electricity would have to be made from coal. The coal requirement as compared with other processes is not excessive. For each metric ton of pulp produced the chlorine method requires 6,500 pounds of steam, or the equivalent of 1,000 pounds of coal, as against the consumption of at least 3,000 pounds of coal in the case of the soda process, including recovery of solutions. The chlorine process, therefore, utilizes 2,000 pounds less of coal and 1200 kilowatts more electric energy per ton of pulp made.

Further, it should be borne in mind that the cost of electric energy per kilowatt diminishes when it is possible in the plant to utilize the heat of low pressure steam. Low pressure steam is just the kind of steam that is utilizable in the chlorine gas process treatment of straws to produce paper pulp.

The investment in plant installation is advantageous as compared with other pulp processes, particularly when we bear in mind the heavy investment of capital required in the ordinary soda process for the intricate procedure of recovery and reutilization of the alkali solutions.

The alkali used in the chlorine process is not generally recovered since it is so small in amount that it can be thrown away. However, along this line see my paper of two years ago presented at the Philadelphia meeting of the American Chemical Society (Industrial and Engineering Chemistry, March, 1927, page 344).

We have spoken particularly of wheat straw and similar grain straws, but there are other agricultural straws, e.g., that from flax, which can furnish materials for the production of a cellulose that is comparable to cotton in its properties, both chemical and physical. Such flax cellulose can be used in the most delicate processes as, for example, in the production of artificial silks such as cellulose acetate and other cellulose esters.

I wish to call attention to the statement made by Rommel: "When the engineering problem of separating the bast from the shive fibers is solved, so that it can be done in one operation, flax straw will be a valuable source of paper of the highest quality and probably of rayon pulp also." ("Cellulose Resources," Industrial and Engineering Chemistry, June, 1928, page 590.) I can assure him and inform him that in my recent trip to Argentina I had the opportunity to see simple and efficient machines in operation which on the flax field give a nearly complete separation of the fibrous portion from the shives, furnishing material that as a basic substance for cellulose production is excellent.

The chlorine method, as I have stated, can furnish a perfectly delignified, white and pure cellulose. On the other hand, it can, if the treatment is less complete, furnish rougher products which mixtures can be used for the production of paper for newspapers, and this, of course, much more cheaply than the production of high grade cellulose. Regarding the details of the cost of production of these low grade products I refer to the articles published in the Proceedings of the Seventh Congress of the Societe de Chimie Industrielle.

I have repeatedly said that the large scale utilization of cereal straw, and of corn stalks and other agricultural by-products would sooner or later find its realization in North and South America. Certain regions of South America, Argentina particularly, possess vast, level and uniform fields of wheat and flax which are not too distant from large urban centers and railroads. Argentina, moreover, possesses the hydraulic energy and oil at a reasonable price, and also numerous deposits of common salt of good quality.

If to the above are added the large national consumption of paper and the impossibility of utilizing forests due to their inaccessibility, we obtain a picture of the situation in Argentina which in the near future will find through the chlorine process its sole logical solution. The amount of straw available in most localities is far greater than the need for paper. For example, in Argentina 0.2 per cent of the straw available would furnish the entire amount of paper needed by Argentina.

The utilization of cereal straw and other agricultural by-products is not only possible today but it will become necessary in the immediate future. We hold that the nations which are first to bring into existence the reality of such a process will derive the greatest benefits. The United States of America has introduced into the world the concept of organized and economic labor, not only with the intelligence that has brought it to the use of Taylor's methods, but also with its energetic "waste campaigns." It should be the first country to put a stop to what today represents one of the greatest losses in the riches of its territory, the destruction of agricultural residues adaptable to the manufacture of cellulose.

Recording the History of Pulpwood*

Tentative Procedure for This Purpose As Well As Determining the Properties of Pulpwood Received at the U. S. Forest Products Laboratory, Madison, Wis.

By C. C. Heritage [1] and W. H. Monsson [2]

One of the most difficult factors to deal with in the production of wood pulp is the variable quality of the wood. Two sticks of wood, even though of the same species and from the same stand, may vary widely in certain essential characteristics, such as weight per unit volume, fiber characteristics, or chemical composition. Such variation may in turn be reflected in the methods required for their proper processing, and also in the qualities and costs of the pulps or papers produced from them. Determination of the commercial value of a given pulp wood is necessary; it involves primarily an accurate delineation of those properties of the wood itself that appear to exert the greatest influence upon the quality of pulp and its cost.

The recognition of the need for such delineation is constantly evidenced in the correspondence of the U. S. Forest Products Laboratory. One mill is interested in securing reliable data on the quantities of bark to be dealt with when using various species, another in a comparison of the net volume per cord of rough wood as exhibited by various species, a third desires data showing the effect of diameter of stick, and still another wishes information on the effect of locality and of density. On most of these questions the available information is extremely meager and inconclusive; on some of them practically no information is at hand.

Assuming, however, the establishment of standards of pulpwood quality there is the further question of what silvicultural conditions are required in producing a wood of suitable pulping characteristics. The technical and economic aspects of such information have been well stated by Mr. O. M. Porter [3] in a recent letter to the U. S. Forest Products Laboratory, as follows:

"The evaluation of pulp wood in relation to forestry is exceedingly important. It is the starting point in any analysis to determine the economic feasibility of forestry. Size of wood is important in the paper industry and is equally important to the forester. It depends upon rate of growth, which gets back to species, soil fertility, climate, and length of growing time to given sizes under different conditions. The time element is very important for compound interest is involved and the over-all charges mount at constantly increasing rates. At present there is little price variation by pulp wood sizes because of indefinite knowledge. Accurate knowledge would be of immediate assistance in pulp wood purchasing and would go far toward placing purchasing policies upon a sound basis."

The task of evaluating pulp wood is one requiring the tedious accumulation and then the careful analysis of a large mass of data. The present paper presents a preliminary step in this task, namely, the establishment in a large laboratory of a tentative procedure for recording the history of the variables under whose influence the wood was produced and also for determining the properties of pulp wood secured for experimental work. Such a procedure must precede the detailed study of the evaluation of various pulp woods in respect to pulp and to commercial paper of particular quality. The correlation of these various data, which will involve statistical treatment, will follow as the work proceeds.

The tentative procedure, which is established at the U. S. Forest Products Laboratory, is outlined as follows:

1. Identification of species.
2. Description of forest and growth data.
3. Description of pulp wood.
4. Commercial evaluation.
5. Technical evaluation.

1. Identification of Species

For research work the species is identified, whenever possible, by a competent botanist in the field or office while leaves and other external characteristics are still available. This is done because it is not always possible to determine the exact species by means of the wood alone. When a shipment is received at the Laboratory a check is made by a wood technologist to determine as far as possible whether the shipment corresponds with the collector's designation of the kind of wood.

2. Description of Forest and Growth Data

The forest from which the pulp wood is cut is described by a competent observer as to general locality, immediate site, and silvicultural characteristics. A record of the source of the pulp wood is made in detail sufficient to enable the place of origin to be found again without difficulty. Whenever practicable a description of the locality in which the wood is cut is given relative to climatic, topographic, and soil factors. The silvicultural characteristics are described, including especially the percentage, occurrence, the average age [4] and the average diameter breast high of the various species; the number of trees per acre; and the history of the stand, particularly with respect to the type of growth, such as virgin, second, and artificially planted. The breast-high diameters of all trees on a small sample plot (1/10 acre) representative of the area and the average height of each diameter class are recorded. This record forms a basis for computing the yield per acre for use in subsequent economic studies. These data, which are taken at the time of or previous to the cutting of the pulp wood, are recorded on special description blanks.[5] Where these blanks require the taking of a number of individual numerical observations, such data are attached to the form so as to be available in case statistical analysis is required to establish averages and deviations.

3. Description of Pulp Wood

Selection and Size of Sample

Owing to the relatively small scale upon which it is desirable to conduct pulping experimentation, and also because of the limitation as to size of the semi-commercial equipment available, the charge of wood for a single experiment may be, as a minimum, a very small portion of a single bolt or, as a maximum, about 5 per cent of a cord. Hence for all work, except rather exhaustive studies on a semi-commercial scale, 2 cords of pulp wood are required. As a rule this quantity is all that can be readily handled without too great expense. Care must be exercised in the selection of this material at the time of cutting so that the averages of the various properties of the sample as determined upon individual bolts may approximate the true average for the forest plot concerned. Depending upon the magnitude of the plot and the diameter of the trees, which governs the number of bolts per cord, the trees as felled should be set aside for the sample in systematic rotation, such for example as every fiftieth tree, and should be so recorded. In case wood of some special characteristic, such as coming from the bole only or the top only or of some diameter

* The experience of all the Sections of the Laboratory has been drawn upon freely in the preparation of this procedure. Especial acknowledgment is due the assistance of B. H. Paul of the Section of Wood Technology. Presented at Fall Meeting of TAPPI, Wausau, Wis., Sept. 25, 1928.

[1] Member TAPPI; In charge Section of Pulp & Paper, U. S. Forest Products Laboratory.
[2] Associate Chemist in Forest Products, U. S. Forest Products Laboratory.
[3] Secretary, American Paper and Pulp Association.

[4] If of uneven age, the range of age classes is given.
[5] Shipment description forms A, BC, and 259H, Section of Wood Technology, U. S. Forest Products Laboratory.

class is desired, the same selection of trees should apply, together with the same selection of the bolt from the tree.

For the later application of statistical methods to the data the following conditions of simple sampling must obtain.[6]

The entire sample must be drawn from the same uniform universe.

Each individual piece in the sample must be selected under identical conditions, in so far as such absolute agreement in conditions is physically possible.

The individuals forming the sample must be completely independent of one another.

For any property determined from individual bolts, the precision is determined by calculating the standard deviation or the probable error of the average for that property, relative to the forest sampled.

Shipments of pulp wood received at the Laboratory are first of all identified by a shipment number, which is stamped with an impression instrument on the ends of at least half of the logs received, and preferably on all.

PHYSICAL FORM AS SELECTED AND RECEIVED

The physical form of the wood as received is described as round pieces, slabs, edgings, block-and-strip waste, or chips; and, as rough or barked. If some particular portion of each sample tree has been selected, it is described as stump, bole, top, or branch. If some particular diameter-breast-high class or some particular bolt-diameter class has been selected, it is described as an inclusive range, such as 4.0 inches to 5.9 inches. When this is done the rules of simple sampling must be observed in case it is desired to evaluate the forest plot in the particular factor chosen. If such evaluation is unimportant, obviously the bolts may be gathered without reference to these rules.

The condition of the wood is recorded; the points most pertinent are soundness, fire scars, and insect or fungus attack. The presence of pitch pockets, pitch streaks, and other important characteristics or abnormalities of a sort likely to affect pulping are recorded. The time of cutting, the time of receipt at the Laboratory, and the time of use in pulping experiments are recorded, together with the conditions obtaining during the intervening times, particularly in regard to air or water seasoning.

4. Commercial Evaluation

Although it is generally agreed that the cord is an undesirable unit of wood measurement, because of its variability with reference to the volume and the weight of actual wood substance, nevertheless, since this unit is still in general use in the production and the sale of pulp wood, it is essential to determine the volume of solid wood per cord for pulp wood as the wood is received for experimental work, in order that the results of such work can be translated to practical commercial conditions. Particularly is this true when the experimental work deals with thinnings, tops, or branch wood, or species not previously used for pulp production.

The method in common practice involves actual measurement of the diameter and the length of each stick composing the cord and calculation therefrom of the total volume of solid wood in the cord. This method is tedious at best and is also inaccurate if the sticks are of irregular shape either in cross section or along the axis, as they often are with certain species or with mill waste.

The alternative is the water displacement method, the accuracy of which is also in question. The displaced volume may be in error because of absorption of water, the entrance of water into cracks, knot holes, hollow centers, and similar voids, or on the other hand to swelling as a counter error. The extent of these errors will in the main depend upon the moisture content of the wood and the duration of submergence. Although the time of submergence is less when readings of volume are taken directly in the submergence tank, the precision of such measurement is greater when the volume is determind by overflow. The overflow method is therefore employed in this Laboratory.

If the sticks are straight and round, the volume of solid wood may be determined by measurement and calculation at the option of the observer, particularly if the moisture content is such as to permit appreciable water absorption under the displacement method. Otherwise the displacement method is used and care is then exercised to see that the pulp wood is received in green condition and the determination made without delay.

The technical evaluation requires the preparation of true average samples of disks, chips, sawdust, and blocks as will be developed later in Section 5 of this paper. The sticks from which these samples are prepared are first selected and set aside.

It is recognized that the precision of the averages for the various properties enumerated in Section 5 would be optimum if every stick were used as a specimen. Considering that the limits of the diameter of the rough stick to be encountered are perhaps 3 inches minimum and 12 inches maximum, the number of sticks per cord is of the range of 300 to 30, respectively. A further sampling of the pulp wood as received is therefore necessary if the work involved is to be kept of reasonable magnitude.

The percentage of specimens to total sticks received depends upon the precision desired and the apparent uniformity of the shipment. A minimum of 10 sticks or of 10 per cent may be set aside, or any greater proportion as may seem desirable. The specimens are selected in systematic rotation; for example, every tenth stick (if 10 per cent is to be selected) may be taken, and each is taken by chance, without any element of conscious choice.

One representative cord is employed for the determination of the volume of solid wood per cord as received. This cord is selected from the wood remaining after setting aside the specimen sticks. It is made up by placing every other stick in the cord rack in regular rotation, proceeding first through the whole lot remaining and then returning to the half remaining and so on, until the 4-foot by 8-foot by 4-foot volume is just filled.

The rack is considered full when no stick can be added and still be confined altogether within the vertical 4- by 8-foot area.

Ordinarily it is customary, in woods practice, to take the height of a stack of cordwood as about 1½ inches less than absolute maximum height to the top of the sticks, with the idea that the depressions and the protrusions will compensate to a great degree. At the Laboratory, however, it is considered more important to lay down conditions of measurement that are both accurate and practicable than to attempt to duplicate a less definite "woods practice" cord. As suggested, this is done by keeping all sticks within the 4- by 8-foot side area.

Care must be taken in piling the representative cord, to see that the sticks are not fitted together unduly. Average woods practice in piling should obtain, with no conscious effort to pile either loosely or closely. Even with perfect uniformity in the piling, however, the use of a rack and one-cord samples probably introduces a small but consistent deficiency in the values for the volumes of solid wood. The source of this error is the same as the one caused by taking the height of the stack as the height to the top of the sticks, although this error appears in the length of the stack. In the rack there is a series of unused spaces along the sides which, under the usual woods practice of making the piles more than 8 feet in length, are ordinarily occupied by sticks of an adjacent cord.

The sticks actually used in pulping are cut 4 feet long ± ½ inch (equivalent to ± 1 per cent). If sticks are longer than 4 feet ½ inch, they are sawed to 4 feet, and if shorter, a plus correction directly proportional to the deficiency is made when the final actual volume per cord is known. When necessary the end faces of the sticks are squared with the axis of the stick.

The displacement vessel, which is capable of holding at least ¼ of a cord, is filled with water to a point just above the overflow and the water is allowed to drain to the proper level just before use.

[6] Wright, Statistical methods in forest investigative work. Canadian Forestry Branch Bull. No. 77, 12 (1925), or texts such as those by Mills, Yule, or Bowley.

The representative cord of wood, after measurement, is peeled[7] by hand, care being exercised to remove as little wood as possible. The overflow receiving vessel is placed in position and the first lot of peeled wood is submerged. The volume displaced, as indicated by the overflow, is recorded, the wood is removed, the displacement vessel is refilled to the overflow, and the operation is then repeated until the entire cord has passed through the displacement vessel.

The operations subsequent to peeling are carried out with as little delay as possible.

The principal factors affecting the volume of solid wood per cord are recorded as follows:

Straightness of sticks.

Extent of occurrence of knots (number and size).

Number of sticks per cord.

Diameter of sticks.

Since the diameter of the sticks is of considerable importance as an easily measurable property correlatable with other properties and variables not so easy to measure, it is desirable to record the diameter of each stick and thus establish a frequency group by means of which this property may be numerically expressed for the cord.

5. Technical Evaluation

A. Physical Properties

In recording the properties of pulp wood for correlation with pulping variables and pulp quality the following physical determinations are made:

Specific gravity based on the volume of the wood as received, to permit determination of the weight of oven-dry wood per cord as received.

Specific gravity based on the volume of the oven-dry wood, to permit determination of the effects on pulping of varying density within the same species.

Percentages (by weight) of moisture and of volatile substances in the wood as received.

Percentage of bark by volume of wood as received, to permit better understanding of variations in the volume of solid wood per rough cord as received.

Percentage of bark by oven-dry weight of wood to permit correlation with disposal and utilization problems.

Age[8] or total annual rings and growth rate, to permit correlation between these properties and pulping effects.

Percentage of heartwood in the total volume of the wood; the heartwood contains more extractives and less cellulose than the sapwood and thus the proportion of it affects the pulping.

Since the moisture content and the condition of the bark may be abnormal and the visibility of the annual rings and of the heartwood boundary may be impaired, at the ends of the logs, one sample disk is cut from the middle of each of the specimen sticks previously selected and is dressed reasonably smooth. The log and disk are indelibly numbered for identification, to facilitate the checking of any abnormal test results that may later be necessary.

The following observations are made on each sample disk with as little delay after cutting as possible:

(a) The periphery of the entire disk, outside of the bark, is outlined on a sheet of paper and the area of the resulting figure is determined.

(b) The bark is peeled from the wood.

(c) The peeled disk is weighed.

(d) The periphery of the wood alone, inside of the bark, is outlined on the sheet of paper used in (a) and the sectional area of the wood alone is determined.

(e) The thickness of the disk at the intersection and at the ends of two diameters normal to each other is measured.

(f) A radius of average length, from the pith to the circumference, is marked indelibly and is measured.

(g) The periphery of the heartwood showing in a face of the disk is transferred by any convenient means, such as tracing on transparent paper or copying by indelible pencil, to a sheet of paper and the area so bounded is determined. It is sometimes very difficult to distinguish heartwood from sapwood, particularly in the common pulp woods. In such cases the measurements should be made only if the differentiation is distinct enough to permit reasonable precision.

(h) The disk is dried to constant weight at 105 degrees C.

(i) The bark is also dried to constant weight at 105 degrees C.

(j) The disk (which may be badly checked in drying) while still warm is dipped in hot paraffin, which gives it a waterproof coating of negligible volume. Any surplus paraffin adhering to the sample is scraped off. The volume of the specimen is found by determining the weight of water that it displaces when immersed.[9] This weight in grams is numerically equal to the volume of the specimen in cubic centimeters.

(k) The total annual rings along the radius of known length, which was measured before the drying of the specimen (f), are counted with the aid of a reading glass.[10]

The methods of calculating from these data the various physical properties listed previously are apparent.

Although a variation in the percentage of springwood or of summerwood to total wood either by weight or by volume may result in variations in the pulping results, the method of determining these percentages must be investigated further before a tentative procedure can be proposed.

The color properties of both heartwood and sapwood are determined from block samples cut from the sample sticks at the same time the sample disks are prepared; the conditions of simple sampling are observed in the selection of these samples. The block samples, which are rectangular, have major dimensions of 2¼ by 4 inches, and any uniform thickness but preferably ¼ inch on the transverse surface. The radial surface, which is planed or sanded smooth, is used for the color determination. If a radial surface 2¼ inches wide cannot be obtained, as may be the case with sapwood, a tangential surface may be employed; the substitution should be recorded. An Ives tint photometer,[11] equipped with a specimen holder so constructed that the specimen may be held as a flat, level surface is employed for the color determination.

The sample bolts remaining after the cutting of sample disks and blocks are barked and, together with the bolts already barked for the volume of solid wood per cord determination, are chipped by means of a semi-commercial chipper of a design similar to that usual in mill equipment. The product is then collected and stored in grain sacks for subsequent pulping experiments. Each sack is immediately sampled by hand to secure a total weight of sample chips of about 50 pounds. This sample is thoroughly mixed and then is reduced by repeated quartering to a sample of about 5 pounds, which is used for chemical analysis; each time the pile of chips is quartered opposite quarters are taken for the next quartering. The remaining 45 pounds of the sample is used in determining the unit weight of chips per cubic foot gross volume at various moisture-content values; such information is of importance in the design or evaluation of mill-storage facilities, the calculation of digester capacity in terms of weight of chips, and the estimation of the cost of bulk shipment in mill-waste utilization problems.

[7] If scales are available a check determination on weight of bark can be secured by weighing the sticks before and after peeling and determining the moisture content of the peeled bark. A check can also be had of the weight of solid wood in the cord since average specific gravity is to be determined.

[8] The forester in the field determines the age of a tree at its breast-high diameter, which is 4½ feet above ground level. This age is determined at the time of cutting as part of the field data. The age referred to here is the average age of the shipment which may or may not be approximately the same as the average age of the trees making up the shipment; the fact depends on whether the sampling was done with such an object in view.

[9] See Technical Note No. B-14, U. S. Forest Products Laboratory.

[10] Where growth data are of considerable importance the rate of growth is recorded by 5-year intervals.

[11] P. K. Baird. Color measurement by the Ives tint photometer; Paper Trade J. 84, No. 17, 48-54 (April 28, 1927).

After the volume-weight determinations the chips are screened to remove any fine material, and knots and ends are picked out by hand. Samples are taken for moisture determination during the screening operation, and the determination is made by drying to constant weight at 105 degrees C.

Enough of the cleaned chips are placed in a box having a volume of from 1 to 2 cubic feet to fill it, the box is jarred gently several times to pack the chips, and then the charge is leveled off by means of a straight edge. The net weight of the chips in the charge is ascertained and recorded. Knowing the moisture content and the weight of a given volume of chips, the green and the oven-dry weights per cubic foot of green chips are calculated. The procedure may be repeated at a lower moisture content if it is desired to determine the effect of air-drying on these two properties.

B. Chemical Properties

There are a considerable number of empirical chemical analytical procedures that have become more or less standard as applied to wood substance. For the purpose of evaluating pulp wood, the following chemical properties are of interest and are determined on oven-dry wood according to the procedures standardized at the Forest Products Laboratory.[11]

Resins, oils, waxes, and fats as determined by *Ether solubility.*

Carbohydrates, tannins, free acids, dye stuffs, and other hot-water soluble bodies as determined by *Hot-water solubility.*

Total cellulose content as determined by the modified Cross and Bevan method.

Lignin content as determined by treatment with 72 per cent sulphuric acid.

Any degraded, decayed, or other chemically abnormal condition as determined by *Solubility in 1 per cent sodium hydroxide solution.*

One further determination is made, using the cellulose isolated by the Cross and Bevan chlorination method. The hydrolysis number[12] of this cellulose is determined by hydrolyzing a 1-gram sample for 3 hours on a boiling water bath with 15 per cent sulphuric acid. The percentage loss in weight is the hydrolysis number. If the same procedure is applied to the pulp produced from the wood, either commercially or experimentally, yields may be calculated or, if known, through other means, may be checked because of the fact that the unhydrolyzed residue from the pulp corresponds exactly in amount and composition to the unhydrolyzed residue from the wood.

Summary

Various available descriptive and testing procedures have been selected and organized into a tentative scheme for evaluating pulp wood as a preliminary step necessary to the correlation of the properties of the wood with pulping variables and pulp quality. This tentative scheme, which is subject to change as experience may dictate, is in force at the U. S. Forest Products Laboratory. It is published here to permit other establishments to examine it and to criticize it or to adopt it if such action seems desirable.

[11] M. W. Bray. Methods used at the Forest Products Laboratory for the chemical analysis of pulps and pulp woods. Presented at the Fall Meeting of TAPPI, 1928.

[12] Hawley and Fleck. Ind. Eng. Chem. 19, 7, 850 (1927).

Current Paper Trade Literature

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts and Bibliography of the Technical Association of the Pulp and Paper Industry

Clarence J. West, Chairman

British Guiana Woods for Papermaking. II. Anon. Bull. Imp. Inst. 26, 4-17 (Apr. 1928). A report on the analysis and pulping tests of 11 samples of commonly occurring timbers of British Guiana, which are likely to furnish considerable quantities of waste wood when the forests are eventually worked. Greenheat (*Ocotea Rodiei* Schomb.) contained 13.0 per cent moisture, 0.48 per cent ash and 47.7 per cent cellulose (54.8 per cent on the dry basis) and had an average fiber length of 1.2 mm. and average fiber diameter of 0.0152 mm. Cooking 6 hrs. at 160 degrees C. with 20 per cent caustic soda (on the weight of the wood) at a concentration of 4 per cent gave 41.0 per cent of well-digested homogeneous pulp which furnished a pale brown paper. It did not bleach readily and required about twice as much bleaching solution as is necessary for poplar pulp, giving a 38 per cent yield of bleached pulp which furnished a soft, rather bulky cream-colored paper of moderate strength. Wallaba (*Eperua falcata* Aubl.) contained 16.7 per cent moisture, 0.58 per cent ash and 33.1 per cent cellulose (39.7 per cent on the dry basis) and had an average fiber length of 1.4 mm. and average fiber diameter of 0.0150 mm. Cooking 5 hours at 160 degrees C. with 20 per cent caustic soda at a concentration of 4 per cent gave 35 per cent of well-reduced pulp which felted well and furnished a soft grayish-brown paper of good strength and quality. The pulp bleached readily to a pale cream color furnishing 32 per cent of bleached pulp. Kakaralli (*Eschweilera laevifolia* Miers (?)) contained 13.7 per cent moisture, 1.8 per cent ash and 42.9 per cent cellulose (49.6 per cent on the dry basis), and had an average fiber length of 1.6 mm. and average fiber diameter of 0.0177 mm. Cooking 5 hours at 160 degrees C. with 20 per cent caustic soda at a concentration of 4 per cent gave a 45 per cent yield of well-reduced pulp, which furnished a soft brown paper of moderate strength but which could not be bleached beyond a pale yellowish-brown. Increasing the time of cooking to 6 hours reduced the yield to 35 per cent, but did not improve the bleachability. Mora (*Dimorphandra mora* Benth. and Hook.) contained 11.6 per cent moisture, 0.5 per cent ash and 47.1 per cent cellulose (53.3 per cent on the dry basis), and had an average fiber length of 1.5 mm. and average diameter of 0.0173 mm. Cooking 5 hours at 160 degrees C. with 20 per cent of caustic soda at a concentration of 4 per cent gave 48 per cent of well-reduced pulp which furnished a strong pale brown paper, but which could not be readily bleached; increasing the cooking time to 6 hours reduced the yield to 41 per cent of pulp which, after bleaching, yielded a strong white paper of good quality. Yaruru (*Aspidosperma excelsum* Benth. (?)) contained 9.6 per cent moisture, 0.64 per cent ash and 47.1 per cent cellulose (52.1 per cent on the dry basis) and had an average fiber length of 1.5 mm. and average fiber diameter of 0.0213 mm. Cooking 6 hours at 160 degrees C. with 20 per cent caustic soda at 4 per cent concentration gave 46.0 per cent of well-reduced pulp which furnished a weak, soft, rather dark brown paper, and which could be bleached only to a yellowish brown. Itikibouroballi (*Leguminosae,* genus indeterminable) contained 12.7 per cent moisture, 0.57 per cent ash, 52.0 per cent cellulose (59 per cent on the dry basis) and had an average fiber length of 1.1 mm. and average fiber diameter of 0.0185 mm. Cooking 5 hours at 160 degrees C. with 20 per cent caustic soda at a concentration of 4 per cent gave 42 per cent of well-digested pulp, which furnished a soft, rather bulky, pale brown paper of moderate strength, and which did not bleach readily requiring a strong bleaching solution to reduce it to a cream color. Trysil (*Pentaclethra filamentosa.*

Benth.) contained 15.5 per cent moisture, 0.4 per cent ash and 42.6 per cent cellulose (50.4 per cent on the dry basis) and had an average fiber length of 1.2 mm. and average fiber diameter of 0.0178 mm. Cooking 5 hours at 160 degrees C. with 20 per cent caustic soda at a concentration of 4 per cent gave 37 per cent of well-digested pulp, which furnished a strong grayish-brown paper, and which could only be bleached to a pale cream color. *Marishiballi* contained 16.2 per cent moisture, 1.4 per cent ash and 52.3 per cent cellulose (62.4 per cent on the dry basis) and had an average fiber length of 1.5 mm. and average fiber diameter of 0.0167 mm. Cooking 6 hours at 160 degreees C. with 20 per cent of caustic soda at a concentration of 4 per cent gave 40 per cent of well-digested pulp free from undisintegrated material, which furnished a rather soft, pale brown paper of fair strength, and which was bleached to a cream color by a strong bleaching solution. Kautaballi (*Licania venosa*, Rusby) contained 10.7 per cent moisture, 1.4 per cent ash and 55.3 per cent cellulose (61.8 per cent on the dry basis) and had an average fiber length of 1.8 mm. and average fiber diameter of 0.0203. Cooking 6 hours at 160 degreees C. with 20 per cent caustic soda at a concentration of 4 per cent gave 42 per cent of well-digested pulp, which furnished a soft, brown, very soft, rather bulky paper of poor strength, and which could only be bleached to a cream color with a strong bleaching solution. Morabukea (*Leguminosae*, genus indeterminable) contained 14.0 per cent moisture, 0.4 per cent ash and 50.5 per cent cellulose (58.8 per cent on the dry basis) and had an average fiber length of 1.2 mm. and average fiber diameter of 0.017 mm. Cooking 5 hours at 160 degreees C. with 20 per cent caustic soda at a concentration of 4 per cent gave 45 per cent of fairly well-digested pulp, which furnished a pale brown paper of good strength but containing some undisintegrated material, and which bleached fairly readily giving a white paper of good strength and almost free from specks. Moraballi (*Leguminosae-Caesalpiniae*, genus indeterminable contained 12.6 per cent moisture, 0.8 per cent ash and 48.45 per cent cellulose (55.4 per cent on the dry basis) and had an average fiber length of 1.1 mm. and average fiber diameter of 0.0216 mm. Cooking 6 hours at 160 degrees with 20 per cent of caustic soda at a concentration of 4 per cent gave 40 per cent of fairly well-reduced pulp which yielded a pale brown paper of fairly good strength and containing only a slight amount of undisintegrated material and which bleached fairly readily to a pale cream color, almost free from specks.—A. P.-C.

Wood Preservation. J. G. Kreer. Paper Ind. 10, 229-233 (May), 444-446, 446a (June, 1928). A review of past experience and present day methods of chemical treatment of wood with preservatives, with a discussion of its influence on reforestation and on the pulp and paper and other industries that depend on forest products.—A. P.-C.

Alpina Nutans **for Paper Making.** Anon. Bull. Imp. Inst. 25, contain a large amount of pithy matter, have the following composition: moisture 9.0 per cent, ash 6.25 per cent, cellulose 49.9 per cent (54.8 per cent on the dry basis), average fiber length 2.62 mm., average fiber diameter 0.0162 mm. The character of the pulp produced by digestion with caustic soda under different conditions is described, and it is concluded that the stems can be converted into paper of very satisfactory quality, the yield of pulp being good and the consumption of caustic soda not excessive.—A. P.-C.

Search After Papermaking Materials—Most Suitable Method of Preparation of Wood for Production of Chemical Pulp—Profitable Utilization of Resinous Woods. Papeterie 49, 549-553, 982-989, 1066, 1069 (June 25, Nov. 10, Dec. 10, 1927). A brief review of recent work along these lines.—A. P.-C.

Removal of Starch From Rags. Papeterie 49, 838 (Sept. 25 1927). Boiling rags which contain starch with caustic soda converts the starch into a yellowish, viscous material, which adheres to the fibers and stains them yellow. The starch should be removed by treatment with diastase (malt extract) which inverts the starch to maltose, which is then washed out.—A. P.-C.

Paper, Cardboard or Slabs From Pulped Tobacco Stalks or Other Tobacco Refuse. J. W. Kelland. Eng. pat. 261,520 (Apr. 16, 1926). The fibers of tobacco material are reduced to pulp and worked mechanically until, preferably, their length is reduced to about 1 mm. They are then formed into sheet material and a 33 per cent solution of acetic acid may be added as a preservative.—

Constitution of Pine Wood Lignin. VII. Beta lignosulphonic acid. Peter Klason. Ber. 61, 614-615 (1928); C.A. 22, 2147. Beta lignosulphonic acid differs from the alpha-acid chiefly in that it is not precipitated from acid solutions by beta napthylamine hydrochloride and it also forms no insoluble basic barium salts. In the first paper it was stated that on complete extraction of the lignin from the wood with sulphur dioxide, 70 per cent of the lignin is found in the waste liquor as the alpha acid. A repetition of the experiment has given the value 67 per cent, the lignin content of the wood being taken as 27 per cent. Beta lignin must, therefore, constitute about 30 per cent of the total lignin. After the alpha acid has been completely removed from the waste liquor, the beta acid is precipitated by lead acetate in almost white amorphous form. To test the earlier suggestion that lignin may contain not only the complex RCH:CHCHO but also the alcohol, RCH:CHCH$_2$OH, 50 cc. were treated with 2 cc. of 30 per cent hydrogen peroxide and 0.2 cc. of ferric chloride and when the hydrogen peroxide had disappeared (12 hours) addition of beta naphthylamine hydochloride gave at once a yellow precipitate with much the same properties as the naphthylamine salt of the alpha acid but containing only half as much methoxyl, i.e., the complex in the resulting acid was $C_{20}H_{19}O_6$ instead of $C_{20}H_{20}O_6$. The beta aldehyde and alcohol of the type RCH(OH)OCH$_2$R with the composition $C_{20}H_{22}O_6$. In the salt $C_{20}H_{19}O_7 + H_2SO_3 + 2\ C_{10}H_7NH_2 + H_2O$ of the beta acid, previously described, it more probable that it is a salt $C_{20}H_{18}O_6 + H_2SO_3 + 2\ C_{10}H_7NH_2$ acid, therefore, probably contains a combination of coniferly $+ H_2O$. Beta lignin is probably that more easily soluble part of the lignin which, according to Kullgren, is dissolved out in the first stage (at 130 degrees) of the boiling of the wood with sodium hydroxide.—C.J.W.

Paper Pulp From Australian Timbers. L. R. Benjamin. J Council Sci. & Ind. Research 1, 65-73 (1927). The only pulping operations now existing in Australia are on straw for straw board. Researches on eucalypts, other indigenous woods, and exotic conifers by the standard processes have shown the following possibilities. Eucalypts, (1) good quality book and fine printing papers when cooked by the soda process with low concentration active alkali and given very mild beater treatment; (2) news print grade of sulphite pulp with following modifications of standard process, 5½ hours instead of 10 hours, 50 per cent increase in bisulphite, 140 degrees C. instead of 150 degrees, claims yield of 60 per cent instead of 45 to 50 per cent; (3) although short fibered *Eucalyptus regnans* and *Eucalyptus obliqua* give groundwood pulp which can be used up to 30 per cent in news print, the other 70 per cent being sulphite pulp. *Pinus insignis* compares with spruce and fir in production of kraft pulp. Grasses and sedges offer little economic possibility.—C. E. P.

Infiltration of Wood From the Standpoint of Its Structure. G. W. Scarth. Pulp & Paper Mag. Can., International No., 129-132 (Feb., 1928). A remarkably clear exposition of the structure of hard and soft woods, illustrated by means of numerous microphotographs and bringing out the mechanism of liquid circulation which, in the case of soft woods, takes place mostly through the bordered pits in the sapwood and through the resin canals in the heartwood.—A. P.-C.

Problem of Wood Supply for the Cellulose Industries, Particularly for the Paper Industry. Andre Navarre. Papeterie 50, 217-222 (March 10, 1928). A discussion of the requirements of wood of the paper industry throughout the world, and of the measures which should be taken to avoid the inevitable shortage which will ultimately have to be faced if wood remains the principal raw material of the industry.

Section of the

COST ASSOCIATION OF THE PAPER INDUSTRY

Affiliated with

THE AMERICAN PAPER AND PULP ASSOCIATION

Edited by
THOS. J. BURKE, C. A., Sec.-Treas.

Business Statistics in the Paper Industry*

By Stanley Byron [1]

Before saying much about the paper industry there are illustrations of the uses of statistics made by other industries which often suggest methods which may be applied to one's own industry. After all, the business principles used by one industry are applicable to most other industries whether they refer to statistics, selling, purchasing or accounting. This is well proved by the frequency with which business men are reaping the benefits from policies suggested by the experiences of other industries. I believe that one concrete illustration of these benefits is the freedom with which most industries will give information as to the conduct of their business to other industries whether in the same line of endeavor or not.

Statistics in Different Industries

Here are a few illustrations of the uses of statistics by different industries and professions. A cotton firm uses the figures to examine the business tendencies of other years where the problems and conditions are the same or similar to those under consideration. A rug manufacturer uses the various current figures in planning its purchases and regulating its stocks of finished goods.

A great range of statistical data is used by steel manufacturers in planning their business policies. One company, for instance, watches particularly the statistics of agriculture, building construction, automobiles, railroads and exports in order to see how the consumption of steel may be affected, while prices, wages and living costs are watched as bearing on wage questions. What other industries are doing for their business you may apply to the paper business.

Comparison With Other Industries

A manufacturer of copper and brass compares the orders accepted by his company with similar data for the iron, plumbing, and other basic industries in order to forecast the concern's business. A firm dealing in household enameled ware compares its own volume of business with general indexes, such as sales of department stores, hardware stores, mail-order houses, and chain stores; while data on wholesale prices and on imports and exports are also used in evaluating the condition of business. A paper manufacturer uses the price indexes as guides to his purchasing and also watches manufacturing activity. A firm of bookbinders watches the statistics on fine paper and on leather production in judging when to purchase, while its sales are compared with those for steel furniture.

A firm engaged in packing waste paper gauges its market possibilities by statistics on production, operation, unfilled orders and stocks of raw material. A manufacturer of abrasive paper uses the data on the production and sales of industries consuming his product to enable him to check his sales program and to keep in touch with his markets. In the newspaper field study of these data has been found useful in writing interpretative editorials on business conditions. Managers of newspapers also find the data useful in general management as well as for publication.

Current Business Information in Trade Papers

Current business information is especially vital to trade papers which must keep up-to-date on the conditions within their industry. A publishing firm uses business data in preparing a monthly review of economic conditions for distribution by banks to their patrons, while another firm puts up these figures in chart form for the business pages of newspapers. Still another concern compiles the figures into an annual reference book. A firm engaged in business charting computes from current statistics the seasonal movements for business-control charts. A real estate firm uses current statistics to determine investment possibilities by watching the trend of the business cycle. There has been a great deal said pro and con about the business cycle but I think it has been definitely established that there is a business cycle. But there is no unanimous opinion as to the period of the cycle or the time of its recurrence and I do believe in the last four years that the swing of the cycle from prosperity to depression has been very much flattened out as I will try to illustrate in a few minutes with some charts of major industries.

A mortgage company computes property values through studies of costs of building materials and labor. A building firm uses data on migration, movements of goods, and failures to obtain prospective trends in building. An engineer in the consulting field keeps his cost indexes up-to-date through the current business statistics. A hardwood lumber manufacturer finds that his statistical reports enable him to discontinue the making of such grades and thicknesses as are flooding the markets and to make such as are scarce. A manufacturer of upholstered furniture finds that the reports of the lumber and textile indexes indicate the best time for purchasing material. A manufacturer of linseed oil watches the statistics on linoleum, artificial leather, printing inks, paints, varnishes, margerine and mayonnaise dressing for indications of the condition of those consumers of linseed oil.

A Good Illustration

Here is a good illustration of the diversified uses that a product may be put to, and the many uses and the many statistics it has to be compared with because the business may be good with one account and poor with another. An alkali manufacturer finds that the trend for burlap bags depends on crops such as jute, cotton

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* Delivered at the convention of the Cost Association of the Paper Industry, Cleveland, Ohio, October 25, 1928.

[1] Statistician of the Hammermill Paper Co., Erie, Pa.

and sugar. Also, that the cotton price is affected by rayon while the amount of black cotton is also important as Osnaburg may be low in price although the cotton crop is short.

A flour mill finds that cotton statistics are important factors in this industry since they affect the supply of bags for flour and also the prosperity of the southern states is greatly affected by cotton, and thus the sale of flour to that section depends largely on the state of the cotton growing industry. I will illustrate the interdependence of one industry upon another not only domestic but also foreign. An inquiry comes to the Department of Commerce from a box factory in the central part of this country asking why the sale of boxes has fallen off in Czecho-Slovakia? The Department of Commerce investigated and found that the sale of flowers which Czecho-Slovakia had sent to France to be made into perfume had stopped because Russia could not buy the perfume which France made from the flowers. The reason was, Russia could not sell tea, the importation of which had been cut off due to the Chinese uprising.

Keeping in Close Touch With Conditions

The National Banks use statistics on pig iron products, stocks and bond averages to keep in close touch with conditions. A life insurance company watches the rental advertisements to see whether or not the cities in which the company are lending money are over built; while statistics on agricultural products indicate the conditions in the agricultural section where the company has placed loans. Business trends are watched by a lawyer in order to see if it will pay to wait several years before obtaining a judgment on a case or to settle for half the amount immediately and be able to bank the proceeds at once.

Now, gentlemen, I have given you many illustrations of how statistical analysis is used in other industries, but the subject of my talk should confine me to the part it plays in the paper industry. How can statistics be applied to conditions within the control of the individual organization which affect production, shipments and costs? At Hammermill we watch the trend of general activities through the use of charts on basic industries and others

MONTHLY REPORT of BUSINESS

				TOTAL To October	
		Sept. 1928	Sept. 1927	1928	1927
WORK. DAYS	No. in Month				
ORDERS	Received Tons				
	Days Behind				
PRODUCTION	Sulphite Tons				
	Paper Tons Gross				
	Daily Average Lbs.				
	Paper Tons Net				
	Shrinkage				
SALES	Tons				
	Dollars				
	Average Price				
PAPER INVENTORY	Saleable Paper				
	Paper on Order				
WOOD	Received				
	Used				
	Cords Per Ton				
	On Hand				
	Price Per Cord				
MISC.	Coal on Hand Tons				
	Price Per Ton				
	Wages Per Ton				
FINANCIAL	Net Profits				

DAILY REPORT OF BUSINESS
1928

PRODUCTION	REPORT FOR Oct. 15	TOTAL This Month	TOTAL Previous Month	TOTAL This Year	TOTAL Last Year
Sulphite Tons—					
Daily Average (Lbs.)					
Paper—Tons					
Daily Average (Lbs.)					
ORDERS					
Received—Tons					
Paper Shipped (Cars)					
Days Behind					
WOOD					
Contracts					
Received					
Used					
On Hand					
CASH (Less Securities)					
Receipts					
Disbursements					
On Hand and in Banks					
EMPLOYEES					
Now					
Leaving					
On Payroll					
WORKING DAYS					
Number in Month					
This Working Day					

which are considered good indicators, such as the production of pig-iron, steel ingots, automobiles, coal, the value of building contracts awarded and bank clearings. These are more or less general factors indicating the country's total business.

Orders, Production and Costs

We also have charts analyzing our orders, production, shipments and costs. You as accountants are probably most interested in the last item—costs. Your departmental costs are of considerable importance to you. I do not mean the little detail costs but costs of the department taken as a whole. If the total cost shows an increase one can easily allocate which department or departments the increase is in. The first step in the reduction of costs is the elimination of wasteful factors of production such as high shrinkage, lost time on the machines, inefficient employees, losses due to poor wood and high coal consumption per pound of paper, etc. In reducing the cost of production, correct purchasing is also a big item. We watch very closely charts we have made on the stock of each raw material and the prevailing market price. The second step and one of equal importance to the cost of production is the elimination of unprofitable lines. In your analysis of costs you will undoubtedly find some grades and weights that should be eliminated. It is possible to have one or more losing lines carried by the more profitable lines and not know it unless costs are carefully analyzed.

When the costs are all gathered together and one has a total expense this may be charted with the total income in such a way as to show just how low the production may go before the expense crosses the income. Some mills have lowered their prices so much that this happens even at full production and that means they are paying someone to take their paper instead of making a profit. I think it is a better policy to maintain the price if operating only 50 per cent and break even than to pay someone to take the product away. It is impossible to increase prices when the general tendency is down. With the price of your product

about 90 per cent above 1914 and wages which are a large part of anybody's cost about 190 per cent above 1914, there is small chance of reducing a price and still make a profit.

If some agile mind will invent a way to run the paper through all the finishing processes by machine and get the wood into sulphite and the stock through the beaters and do most of the maintenance by machinery then by doubling the speed of the machines one might be able to reduce the price about 10 per cent, and still make a small profit.

Chart Making

I would like to say a few words about chart making or compiling figures when using a base year or index numbers from a base. We have found and believe other concerns are coming to the same conclusion, that a base which takes in 5 years is better than one using one, two or three years. The reason is a 5 year base will practically be a normal and change very little from year to year, while the base of one, two or three years will fluctuate widely. After considerable experimenting and discussion we have standardized on the five years immediately preceding the current year. We hope it will not be long before Mortimer B. Lane, editor of Survey of Current Business, does the same. Then one can compare his own industry with the current figures of any other industry without rearranging one's figures or figuring everything on a different base. Now one group will be based on 1914, another on 1919, another 1923 to 1925, and others on 1923 to 1927. A progressive base keeps an industry more on its toes.

In concluding I am going to distribute two reports that we use at Hammermill. Please look at the first one (Daily Report of Business); this report is distributed every morning by eleven o'clock, showing the previous day's business. The first column is the previous day's business, the column headed (This Month) is where the accumulated figures for this month to date are placed, and the column headed (Previous Month) the same. The column headed (This Year) and (Last Year) we only use for wood and employees. The other report (Monthly Report of Business), the first column is the current month, the second column is the same month last year, the third column is the accumulated amount this year to date, and the fourth column is the same for last year. On this report all decreases are in red. This report is distributed by the 5th of the next month to five executives and they use it.

Shrinkage?*

By C. M. Baker[1]

Shrinkage? What is shrinkage? The dictionary defines it as "contraction, as of a metal by cooling or wood by drying." A board may become smaller by shrinkage due to loss of moisture, but if a piece were sawed off and thrown away this would not be considered shrinkage. In the pulp and paper industry the term "shrinkage" is used to indicate the difference between the raw materials and the finished product, and therefore includes losses such as fibers and filler discharged into the streams, also wastes such as foreign material in newspapers used in the making of paper board. With such usage the term "shrinkage" becomes a camouflage for losses. One of the principal values of cost data is to indicate where losses occur in order that corrections may be made to convert them into profits. Can this be successfully done by hiding them under the cloak of shrinkage?

Calling a Spade a Spade

The principal object of this paper is to emphasize the necessity of "calling a spade a spade" or to be more specific calling losses losses, rather than camouflaging them by the term "shrinkage." But, you say, how are we to know what the losses are? Nevertheless you know they exist and their determination is not difficult although such may not be your specific duty. Cooperation of the technical staff of the mill is necessary in this respect since only by an actual measure of the white water losses in the effluent from the mill can they be definitely determined but this is neither difficult nor expensive. It is indeed surprising to learn how few mills have actually made a systematic study of their losses. They have been prone to consider these losses necessary, therefore the reason for applying to them the term "shrinkage." More than one-half of the mills replying to a questionnaire sent out in 1927 reported that they knew not what their white water losses were, although many stated that they believed them to be large, and it is probable that the percentage in those mills not reporting is even greater. Now if you are to continue to call these losses "shrinkage" and present them as such to your executive the tendency will be to continue in the same old way, but if you insert the word "loss" in your reports more serious consideration will be given the subject even if no definite figures are available as to the extent of this loss.

A paper by the writer entitled "Profit and Loss in Fiber Utilization," published in the September 20 issue of PAPER TRADE JOURNAL, summarizes in some detail data secured from the questionnaire sent out in December, 1927. Conservative estimates based upon these data indicate a net annual saving to the pulp and paper industry due to fiber utilization of $5,000,000, but that there is still a potential net loss of over $6,000,000. These figures represent net profit or loss after due allowance for interest, depreciation, and operation of all equipment. The estimated net annual saving and loss in the various grades is given in the following table:

SAVING AND LOSS IN FIBER UTILIZATION

Classification	Net Annual Saving	Net Annual Loss
Paper Mills		
Book	$1,244,600	$1,239,700
Wrapping	478,632	507,248
Paperboard	219,632	253,568
News	448,546	322,644
Writing	548,947	507,758
Unclassified	530,330	473,195
Strawboard	.....	* 1,110,000
Tissue	271,860	436,770
Totals	$3,742,547	$4,850,883
Pulp Mills		
Sulphite	$843,116	$874,556
Ground wood	380,136	335,204
Sulphate	92,512	137,088
Soda	203,304	191,436
Totals	$1,519,068	$1,538,284
Total for industry	$5,261,615	$6,389,167

* Computations based upon new process.

To indicate more specifically the effect of fiber utilization or losses the following specific data are given regarding individual mills as reported in the questionnaires.

Reduction in Losses	Financial Return
Book Mills	
4,000 pounds daily	$24,000
Losses reduced from 6,700 to 2,000 pounds daily	28,200
Shrinkage reduced from 15 per cent to 9 per cent	87,300
Fiber losses reduced from 6 pounds to .2 pounds per thousand gallons, and clay from 14 pounds to 1.3 pounds per thousand gallons.	376,700
Wrapping	
Loss reduced from 15,000 to 5,000 pounds daily	57,000
Loss reduced from 2½ or 3 pounds per thousand gallons of effluent to 1/4 or 1/3 pounds	10,000
Save one ton daily	12,000
Loss reduced from 20,000 pounds to 4,000 pounds daily	119,000
Shrinkage reduced from 3½ per cent or 5 per cent to 2½ per cent or 3 per cent	50,400
Loss reduced from 3 pounds to .8 of a pound per thousand gallons	20,000
Shrinkage reduced from 3 per cent to 1 per cent	29,500
Loss reduced from 50,000 pounds to 17,400 pounds daily	32,600
Shrinkage reduced from 9 per cent to 5½ per cent	45,200
Shrinkage reduced from 13 pounds to 5½ pounds	72,000
Loss reduced from 110 pounds to 50 pounds per ton of product	32,400

* Delivered at the convention of the Cost Association of the Paper Industry, Cleveland, Ohio, October 26, 1928.

[1] Engineer, American Paper & Pulp Association.

Paperboard Reduction in Losses	Financial Returns
Recover 97 per cent total solids in white water by tanks, coagulation, and recirculation	50,000
20 per cent of white water recovered—	
Losses now 2 pounds per thousand gallons	(?)
Loss reduced from 11,000 to 6,000 pounds daily	13,900
Loss reduced from 2 pounds to ½ pound per thousand gallons	9,380
Loss reduced from 5,214 pounds to 1,796 pounds daily	10,000
Loss reduced from 8 to 4 tons daily	10,500
News	
White water losses now about 500 pounds daily, less than 1 per cent of losses prior to improvement	(?)
Loss reduced from 3 or 5 tons to ½ ton daily. Now one pound per thousand gallons with flow of 1,200,000 gallons daily, equivalent to a total loss of 1,200 pounds daily	20,500
Loss reduced from 3 per cent to ¼ per cent	141,600
Loss reduced from 2.8 to .85 tons daily	11,000
Writing	
Can not use white water because of change in colors	(?)
Loss reduced from 7,000 to 2,900 pounds daily	36,900
Loss reduced from 4.75 to 2 pounds per thousand gallons	20,250
Unclassified	
Loss reduced from .75 to .2 pounds per thousand gallons	10,000
Loss reduced from 8 per cent or 10 per cent to 2 per cent	87,000
Reduced from 24,500 to 3,600 pounds daily	20,900
Reduced from 11 per cent to 3.5 per cent	68,000
Tissue	
Loss reduced from $160,000 to $30,000 annually	130,000
Loss reduced from 23,000 to 8,000 pounds daily	77,000
Miscellaneous Mills	
Mill manufacturing news, wrapping, tissue, ground wood, sulphite and sulphate, recovers 20 tons of fiber daily	190,200
Mill manufacturing writing, book, wrapping and board reduced loss from 6 per cent to 1 per cent or 2 per cent	170,000
Mill manufacturing book, wrapping, news, ground wood, and sulphite, reduced loss from 5 per cent or 6 per cent to 2 per cent or 3 per cent	707,600
Mill manufacturing book, paper board, sulphite, sulphate, and soda, reduced loss from 1 or 1½ pounds to .3 or .5 pounds per thousand gallons	45,000

The losses now recovered in these mills was considered shrinkage until recovery processes were developed and installed. It is not difficult to measure with reasonable accuracy the fiber and fiber losses discharging from the sewers of the mill. By application of the stock value these losses can be converted into actual monetary value. A number of mills are now daily collecting composite samples of the waste, analyzing them, and converting these data to actual financial loss. These reports then appear each morning upon the desk of the mill superintendent, chemist, chief executive, and others. Such a procedure keeps constantly before the officials and personnel of the mill the actual losses and continually stimulates effort toward recovering them. Furthermore, continuous sampling and analyses is a check up on carelessness in the mill with reference to spills, condition of screens, and other avoidable losses. Some of the larger mills are placing one man full time upon the question of white water recovery, utilization, analyses and checking. White water losses are definitely measurable, and there is no logical excuse for not considering them as actual losses in financial reports.

At a Certain Board Mill

A certain board mill recently developed a closed system so that there was little if any waste into the sewer. After being in operation for some time, however, it was discovered that their shrinkage was practically as great as before the improvement. Investigation indicated biological decomposition in the tanks and piping system of the mill, although serious trouble with slime had not developed. Sterilization with chloride of lime reduced the shrinkage from approximately 14 per cent to 7 per cent. Such a loss as indicated in this mill more nearly approaches the definition of shrinkage than fiber losses into the sewer, yet by the application of remedial measures the shrinkage or loss was reduced from 14 per cent to 7 per cent.

Conclusion

Losses in the paper industry now included in the term "shrinkage" amount to from $6,000,000 to $10,000,000 annually. It does not seem logical and consistent to camouflage this loss by the term "shrinkage" when by the application of known processes it can be recovered to the financial advantage of the industry. Members of the Cost Association can do much to bring this situation to the attention of their executives by including in their financial statements an estimate of the actual losses and differentiating between true losses and permissible shrinkage.

COST SECTION

Canadian Paper Exports Decline

September exports of pulp and paper from Canada, according to the report issued by the Canadian Pulp and Paper Association, were valued at $14,759,722. This was a decline of $803,753 from the August total, values for both wood pulp and paper being lower than in the preceding month.

Wood pulp exports in September were valued at $3,568,494 and exports of paper at $11,191,228 as compared with $3,618,205 and $11,945,270 respectively in August.

As compared with September 1927 details of the various grades of pulp and paper are as follows:

	September, 1928		September, 1927	
PULP:	Tons	$	Tons	$
Mechanical	15,475	403,158	28,614	874,724
Sulphite Bleached	21,865	1,652,506	18,467	1,362,914
Sulphite Unbleached	14,972	750,214	16,965	884,121
Sulphate	12,034	709,068	15,168	897,752
Screenings	2,874	53,548	2,901	54,704
	67,220	3,568,494	82,115	4,074,215
PAPER:				
News Print	170,840	10,752,406	168,855	11,054,318
Wrapping	1,175	128,587	798	92,288
Book (cwts.)	6,918	59,796	9,382	66,708
Writing (cwts.)	2	97	597	4,917
All Other	.....	250,342	.....	356,219
		11,191,228		11,574,450

For the first nine months of the year, total exports of wood pulp and paper amounted to $139,549,440 as compared with $130,046,439 in the corresponding months of 1927, an increase for the current year of $9,503,001.

The increase is due to larger shipments of paper which for nine months of this year were valued at $106,126,107 as compared with $94,715,232 in the nine months 1927. Wood pulp exports were lower, being valued at $33,423,333 as against $35,331,207 in 1927.

Quantities and values for the nine months' period were:

	Nine Months, 1928		Nine Months, 1927	
PULP:	Tons	$	Tons	$
Mechanical	137,236	3,730,754	193,616	5,891,014
Sulphite Bleached	188,200	14,242,220	178,292	13,812,062
Sulphite Unbleached	157,620	7,923,915	145,984	7,906,883
Sulphate	119,578	7,066,900	124,266	7,500,245
Screenings	22,864	459,544	11,638	* 221,003
	625,498	33,423,333	653,796	35,331,207
PAPER.				
News Print	1,583,010	101,695,383	1,373,412	89,910,385
Wrapping	11,888	1,302,136	10,810	1,227,037
Book (cwts.)	50,421	418,752	78,102	532,095
Writing (cwts.)	3,469	32,085	10,682	86,342
All Other	.....	2,677,751	.....	2,959,453
		106,126,107		94,715,232

* 6 months only.

Pulpwood exports for the nine months amounted to 1,285,127 cor valued at $12,649,787 as compared with 1,356,164 cords at $13,655,821 exported in the corresponding months of 1927.

Survey of Forestry Progress

The Woodlands Section of the American Paper and Pulp Association is cooperating with the Society of American Foresters in a survey of the progress of forestry in the United States. As a preliminary step in gathering information on accomplishments in forestry, the section has recently requested all companies which own timber to give in as great detail as possible the extent and cost of forestry practice already undertaken. This data will be checked subsequently through a committee of the interested organizations.

A preliminary survey of forestry progress conducted by the United States Chamber of Commerce in connection with the Commercial Forestry Conference held in Chicago, in 1927, revealed a widespread interest in forestry in the paper industry. In this survey 34 pulp and paper companies, owning in the aggregate nearly seven million acres of forest land, reported that forest management policies had been formulated and that constructive forestry work was in progress.

The present survey is designed to cover more adequately all regions and all industries. Present plans indicate that this survey will form the basis of a permanently continuing record of forest practice in the United States by private owners.

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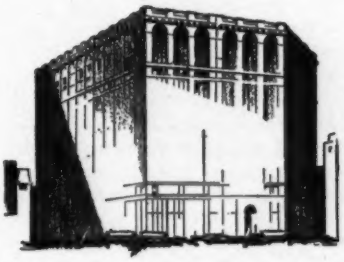

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Obituary

Lewis L. Leadbetter

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., October 25, 1928.—Lewis L. Leadbetter, prominent lumber and paper manufacturer of Oregon, and of California, died October 21 in a hospital at Santa Barbara, following a third operation for intestinal trouble. He had been ill for several months.

Mr. Leadbetter was manager of the California-Oregon Paper Company, which is widely active along the West Coast. This company includes among its holdings the Oregon Pulp and Paper Company, Salem; the Columbia Paper Company, Vancouver, Wash.; the Vancouver Kraft, Ltd., Port Mellon, B. C., and mills in Los Angeles.

Mr. Leadbetter was 52 years of age. He is survived by his widow, Vida Leadbetter, three daughters, Ann, Laura and Vida; two sisters, Mrs. Frederick F. Pittock of Portland, and Miss Sallie Leadbetter of Santa Barbara, and two brothers, F. W. Leadbetter, president of the California-Oregon Paper Company, and C. H. Leadbetter of Portland.

Funeral services were held in Santa Barbara and were attended by Oregon relatives.

A. M. Stronach

ROCHESTER, Mich., October 31, 1928.—A. M. Stronach, director and vice president of the Rochester Paper Company, manufacturers of blotting paper, died at Pittsfield, Mass., October 3. Mr. Stronach was born at St. Andrews, Scotland, December 8, 1862. Death was due to water entering the ear while sea bathing during the past summer, causing spinal meningitis. Mr. Stronach is survived by his widow, one daughter and one son, W. A. Stronach, treasurer of the Rochester Paper Company.

Charles R. Heeter

DETROIT, Mich., October 29, 1928.—Charles R. Heeter, general manager of the Union Paper and Twine Company of Michigan, aged 38, died at the Ford Hospital, Detroit, October 18. His death resulted from pulmonary embolism following an operation for appendicitis.

Funeral services were held from the chapel of the Undertaking Parlors of Whitmer Sons, 704 Main street, Dayton, Ohio.

To Start Two Additional Machines

[FROM OUR REGULAR CORRESPONDENT]

CORINTH, N. Y., October 31, 1928.—Orders were received early this week at the Hudson River Mill of the International Paper Company to prepare two of the five idle machines for immediate operation. This action followed what is said to have been a marked improvement in the paper trade. Repair crews were immediately put to work repairing machines No. 8 and 9. The heavy rolls will be removed for grinding and made ready for production. Machinery on the main floor and in the basement of the mill will be repaired and overhauled. One of the machines may possibly start operations in a day or two with the other being put in operation some time during the coming week.

The status of the other three idle machines which were closed down last January is still uncertain. The two machines now being made ready will probably be run on news print. With the starting up of these machines the number of machines in operation at the Hudson River Mill will be brought to seven. 70 additional employees will be required to operate the two machines.

For the past nine months operations at the Hudson River Mill have been on a greatly reduced scale. Last January, five of the ten machines were closed down and four of the remaining five were altered to make specialty papers. Since then the five machines have been operating but not always at capacity. Last week, however, all five machines operated six days, three producing specialty paper, one making newsprint and the other wrapper.

With seven paper machines in operation it is said that the Curtis Pulp Mill normally employing from 30 to 50 men will resume operations producing ground wood pulp for the Hudson River Mill. The closing down of five machines last January caused the Curtis Mill to suspend. For a time recently while the low water in the river interfered with the operation of the grinders at the local mill it was necessary to start up some of the machinery in the Curtis plant. Heavy rains in the Adirondacks, however, have raised the Hudson two feet at this point making it possible to again operate the grinders at the Hudson River Mill.

Waxed Paper Manufacturers Meet

WASHINGTON, D. C., October 31, 1928.—Manufacturers of waxed paper held a conference here at the Mayflower Hotel last week to work out regulations applicable to the trade practice conference practice rules which have been approved by the Federal Trade Commission, as fully set forth some weeks ago in PAPER TRADE JOURNAL.

It was impossible to complete the work and adjournment was taken until November 7 when a further conference will be held in Chicago.

There was a very large gathering of waxed paper manufacturers present, said to have been perhaps the largest gathering of these manufacturers ever held. The conference was able to agree on regulations as regards split shipments and etchings but no conclusions were reached in connection with plates and ink coverage. These two latter matters will be discussed at the Chicago meeting.

Every waxed paper manufacturer in the United States, regardless of whether he was a member of the association or not was invited to attend the Washington conference. The meeting was called by Paul S. Hanway, secretary of the American Waxed Paper Association who had been elected secretary of the Waxed Paper Trade Practice Conference. Those attending the conference expressed pleasure at the amount of work accomplished at the conference here and it is confidently expected that the whole matter will be disposed of at the November 7 conference.

News Print Production for September

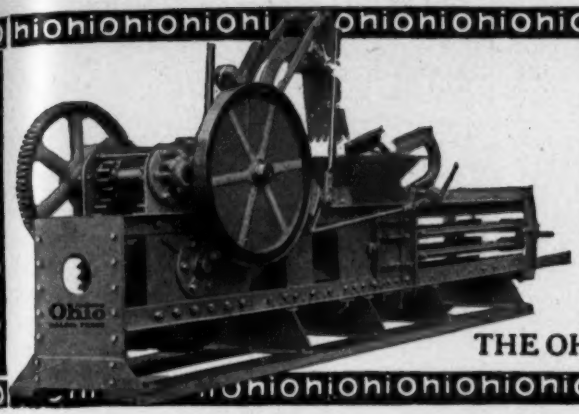
Production of news print in Canada during September, 1928, amounted to 185,059 tons and shipments to 194,233 tons, according to the News Print Service Bureau. Production in the United States was 102,852 tons and shipments 107,894 tons, making a total United States and Canadian news print production of 287,911 tons and shipments of 302,127 tons. During September, 18,844 tons of news print were made in Newfoundland and 1,434 tons in Mexico, so that the total North American production for the month amounted to 308,189 tons.

The Canadian mills produced 212,177 tons more in the first nine months of 1928 than in 1927, which was an increase of 14 per cent. The United States output was 88,063 tons or 8 per cent less than for the first nine months of 1927. Production in Newfoundland was 20,341 tons or 14 per cent more and in Mexico 1,407 tons more, making a total North American increase of 145,762 tons or 5 per cent over the first nine months of 1927.

During September the Canadian mills operated at 80 per cent of rated capacity and the United States mills at 77.2 per cent. Stocks of news print paper at Canadian mills totaled 43,800 tons at the end of September and at United States mills 35,687 tons, making a combined total of 79,487 tons, which was equivalent to 5.2 days' average production.

A. T. Hastings Joins Staff of Dorr Co., Ltd.

A. T. Hastings, who has for several years been manager of the Los Angeles office of the Dorr Company, sailed for Europe on October 20 to join the Dorr Company, Ltd., London. A. M. Kivari succeeds Mr. Hastings as manager of the Los Angeles office.



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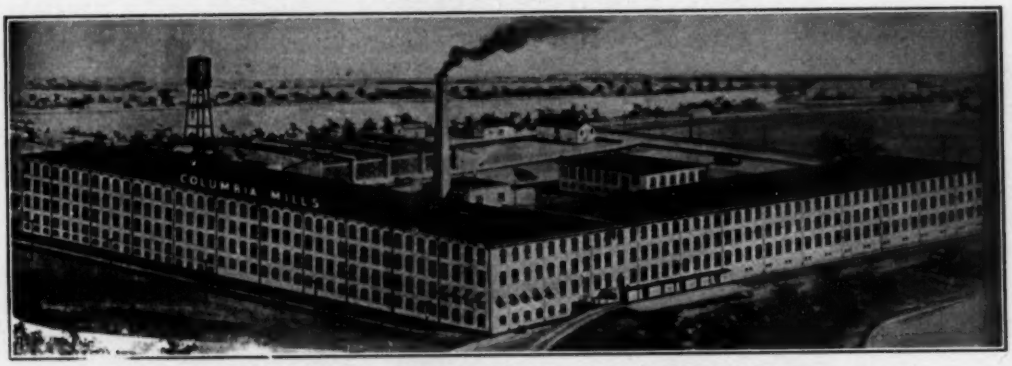

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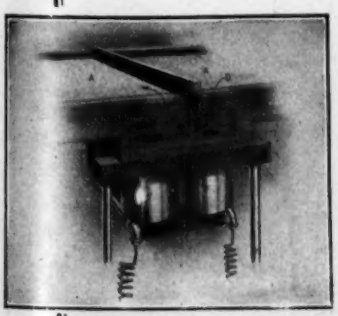

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NEW YORK IMPORTS

WEEK ENDING OCTOBER 27, 1928

SUMMARY

Cigarette paper .....127 cs.
Wall paper .....16 bls., 18 cs.
Paper hangings .....61 bls., 12 cs.
News print .....95 pkgs., 1,386 rolls
Printing paper .....4 bls., 141 cs.
Wrapping paper .....29 bls., 150 cs.
Copy paper .....22 cs.
Writing paper .....22 cs.
Tissue paper .....19 cs.
Colored paper .....51 cs.
Decalcomania paper .....19 cs.
Filter paper .....232 bls., 99 cs.
Drawing paper .....5 cs.
Surface coated paper .....189 cs.
Baryta coated paper .....155 cs.
Gold coated paper .....3 cs.
Metal coated paper .....4 cs.
Photo paper .....11 cs.
Silk paper .....5 cs.
Stencil paper and ink .....52 cs.
Greaseproof paper .....39 cs.
Straw paper .....14 bls.
Straw board .....1,137 rolls
Miscellaneous paper .....260 cs.

CIGARETTE PAPER

Gluckman & Strauch, De Grasse, Havre, 6 cs.
British American Tobacco Co., Majestic, Southampton, 61 cs.
Standard Products Corp., France, Havre, 60 cs.

WALL PAPER

C. Grimmer & Son, Deutschland, Hamburg, 3 bls., 1 cs.
S. Stern Stiner & Co., Deutschland, Hamburg, 2 bls.
F. J. Emmerich, Deutschland, Hamburg, 3 bls.
American Exchange Irving Trust Co., Deutschland, Hamburg, 11 cs.
G. J. Hunken, Dresden, Bremen, 4 cs., 6 bls.
F. J. Emmerich, Caronia, Southampton, 1 ble.
F. J. Emmerich, Majestic, Southampton, 1 ble.
A. C. Dodman, Jr., Inc., Majestic, Southampton, 2 cs.

PAPER HANGINGS

W. H. S. Lloyd & Co., Caronia, Southampton, 18 bls., 10 cs.
W. H. S. Lloyd & Co., Laconia, Liverpool, 2 cs.
A. C. Dodman, Jr., Inc., Laconia, Liverpool, 43 bls.

NEWS PRINT

Perkins Goodwin & Co., Deutschland, Hamburg, 504 rolls.
Parsons & Whittemore, Inc., Dresden, Bremen, 820 rolls.
Journal of Commerce, Dresden, Bremen, 62 rolls.
Guaranty Trust Co., Hjelmaren, Gothenburg, 95 pkgs.

PRINTING PAPER

J. I. Bernitz, Victoria Maru, Hamburg, 58 cs.
National City Bank, Dresden, Bremen, 79 cs.
Japan Paper Co., American Banker, London, 4 bls.
Hoboken Trust Co., America, Bremen, 4 cs.

CELLOPHANE PAPER

G. W. Sheldon & Co., Majestic, Southampton, 11 cs.

WRAPPING PAPER

E. Dietzgen & Co., Gaasterdyk, Rotterdam, 51 cs.
Wilson Paper Corp., Gaasterdyk, Rotterdam, 29 bls.
Steffens Jones Co., Belgenland, Antwerp, 6 cs.
Birn & Wachenheim, Belgenland, Antwerp, 87 cs.
Universal Carloading Co., America, Bremen, 6 cs.

COPY PAPER

Whitfield Paper Works, Havre Maru, Kobe, 22 cs.

WRITING PAPER

Japan Paper Co., France, Havre, 3 cs.
Guibout freres, France, Havre, 8 cs.
American Express Co., Waukegan, Havre, 11 cs.

TISSUE PAPER

F. B. Vandegrift & Co., Laconia, Liverpool, 5 cs.
W. J. Byrnes & Co., Laconia, Liverpool, 6 cs.
Meadows, Wye & Co., Laconia, Liverpool, 5 cs.
G. W. Sheldon & Co., American Banker, London, 3 cs.

COLORED PAPER

S. Gilbert, Dresden, Bremen, 22 cs.
S. Gilbert, America, Bremen, 29 cs.

DECALCOMANIA PAPER

Phoenix Shipping Co., Deutschland, Hamburg, 7 cs.
C. W. Sellers, America, Bremen, 8 cs.
L. A. Consmiller, America, Bremen, 4 cs.

FILTER PAPER

C. Schleicher Schull Co., Gaasterdyk, Rotterdam, 15 cs.
H. Reeve Angel & Co., Inc., Caronia, Southampton, 9 cs.
J. Manheimer, Laconia, Liverpool, 156 bls.
H. Reeve Angel & Co., Inc., Majestic, Southampton, 13 cs., 60 bls.
E. Fougera & Co., Majestic, Southampton, 62 cs.
A. Giese & Son, Majestic, Southampton, 16 bls.

DRAWING PAPER

H. Reeve Angel & Co., Inc., Caronia, Southampton, 2 cs.
Devoe & Reynolds Co., Caronia, Southampton, 3 cs.

SURFACE COATED PAPER

P. C. Zuhlke, Belgenland, Antwerp, 145 cs.
Gevaert Co. of America, Belgenland, Antwerp, 44 cs.

BARYTA COATED PAPER

J. H. Schroeder Banking Corp., Dresden, Bremen, 50 cs.
Globe Shipping Co., Dresden, Bremen, 30 cs.
Globe Shipping Co., America, Bremen, 75 cs.

GOLD COATED PAPER

F. Murray Hill, Dresden, Bremen, 3 cs.

METAL COATED PAPER

Steffens Jones Co., Dresden, Bremen, 1 cs.
Hensel, Bruckman & Lorbacher, Dresden, Bremen, 3 cs.

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J. H. Schroeder Banking Corp., Dresden, Bremen, 11 cs.

SILK PAPER

American Express Co., Deutschland, Hamburg, 5 cs.

STENCIL PAPER AND INK

Arlac Dry Stencil Co., Deutschland, Hamburg, 52 cs.

GREASEPROOF PAPER

Central Union Trust Co., Deutschland, Hamburg, 39 cs.

STRAW PAPER

American Express Co., Victoria Maru, Hamburg, 14 bls.

STRAW BOARD

A. Vuyk, Gaasterdyk, Rotterdam, 284 rolls.
Perkins Goodwin & Co., Gaasterdyk, Rotterdam, 128 rolls.
Hygrade Eagle Corrugated Paper Prod. Corp., Gaasterdyk, Rotterdam, 160 rolls.
Hygrade Eagle Corrugated Paper Prod. Corp., Volendam, Rotterdam, 160 rolls.
Grand Corrugated Paper Co., Volendam, Rotterdam, 256 rolls.
A. Vuyk, Volendam, Rotterdam, 136 rolls.
C. H. Powell & Co., Volendam, Rotterdam, 13 rolls.

MISCELLANEOUS PAPER

J. Beckhard & Co., Gaasterdyk, Rotterdam, 3 cs.
Globe Shipping Co., Volendam, Rotterdam, 144 cs.
Coenca Morrison Co., Deutschland, Hamburg, 1 cs.
Van Vlaanderen Machine Co., De Grasse, Havre, 10 cs.
A. L. Diament & Co., France, Havre, 5 cs.
Coenca Morrison Co., France, Havre, 2 cs.
F. J. Emmerich, France, Havre, 2 cs.
Standard Products Corp., France, Havre, 93 cs.

RAGS, BAGGINGS, ETC.

Merchants National Bank, Gaasterdyk, Rotterdam, 19 bls. rags.
American Exchange Irving Trust Co., Gaasterdyk, Rotterdam, 93 bls. bagging.
Bank of The Manhattan Co., Volendam, Rotterdam, 71 bls. bagging.
Darmstadt, Scott & Courtney, Volendam, Rotterdam, 10 bls. rags.
C. R. Spence & Co., Bristol City, Bristol, 177 bls. rags.
Castle & Overton, Inc., Bristol City, Bristol, 128 bls. bagging.
Fidelity Trust Co., Hinnoy, Barcelona, 227 bls. rags.
Equitable Trust Co., Hinnoy, Barcelona, 134 bls. rags.
Union Bank & Trust Co., Hinnoy, Barcelona, 177 bls. rags.
Interstate Trust Co., Hinnoy, Barcelona, 82 bls. rags.
Interstate Trust Co., Tagliamento, Naples, 27 bls. rags.
Railway Supply & Manfg. Co., Mercer, Rotterdam, 258 bls. cotton waste.
Castle & Overton, Inc., Mercer, Rotterdam, 102 bls. rags.
French American Banking Corp., Burma, Bari, 93 bls. rags.
Equitable Trust Co., Deutschland, Hamburg, 13 bls. rags.
Chase National Bank, Deutschland, Hamburg, 34 bls. flax waste.
E. A. Stone & Co., Adriatic, Liverpool, 33 bls. rags.
National City Bank, Adriatic, Liverpool, 21 bls. rags.
American Waste Co., De Grasse, Havre, 65 bls. rags.
W. Schall & Co., America, Bremen, 22 bls. cotton waste.
D. Galloway, Inc., Havre Maru, Kobe, 100 bls. rags.
Atlas Waste Manfg. Co., Havre Maru, Kobe, 60 bls. rags.
A. H. Searle, Inc., Massilia, Glasgow, 65 bls. paper stock.
C. Belsky, Massilia, Glasgow, 83 bls. rags.
Darmstadt, Scott & Courtney, Massilia, Glasgow, 137 bls. jute waste.
V. Galaup, Massilia, Glasgow, 36 bls. rags.
Katzenstein & Keene, Inc., Massilia, Glasgow, 138 bls. bagging.
American Rag Trading Co., Massilia, Glasgow, 113 bls. bagging.
Castle & Overton, Inc., Coahoma County, Antwerp, 40 bls. rags.
Star Woolen Co., Coahoma County, Antwerp, 21 bls. rags.
Guaranty Trust Co., Coahoma County, Antwerp, 34 bls. rags.
E. J. Keller Co., Inc., Lepanto, ——, 327 bls. flax waste.
E. J. Keller Co., Inc., Lepanto, ——, 44 bls. thread waste.
Castle & Overton, Inc., Patagonier, Antwerp, 77 bls. rags.
Castle & Overton, Inc., Caucasier, Antwerp, 137 bls. rags.

OLD ROPE

Brown Bros. & Co., Gaasterdyk, Rotterdam, 60 coils, 57 bls.
American Exchange Irving Trust Co., Gaasterdyk, Rotterdam, 47 coils.
American Exchange Irving Trust Co., Volendam, Rotterdam, 98 coils.
Brown Bros. & Co., Volendam, Rotterdam, 73 bls., 58 coils.
Banco Com'l Italiane Trust Co., Burma, Fiume, 38 bls.
W. Schall & Co., Hinnoy, Barcelona, 178 coils.
W. Schall & Co., Dresden, Bremen, 246 coils.

CASEIN

Tradesmans National Bank, Corsican Prince, Buenos Aires, 250 bags, 15,000 ks.
Chemical National Bank, Corsican Prince, Buenos Aires, 834 bags, 50,040 ks.
Champion Coated Paper Co., American Legion, Buenos Aires, 1,022 bags.
Kalbfleisch Corp., American Legion, Buenos Aires, 401 bags.
Karolith Co., Frence, Havre, 134 bags.

CHINA CLAY

National City Bank, Bristol City, Bristol, 234 bags.

WOOD PULP

Castle & Overton, Inc., Gaasterdyk, Rotterdam, 580 bls. wood pulp.
M. Gottesman & Co., Inc., Burma, Sebenico, 800 bls. wood pulp.
Chemical National Bank, Deutschland, Hamburg, 255 bls. wood pulp, 51 tons.
Castle & Overton, Inc., Deutschland, Hamburg, 3,251 bls. wood pulp, 487 tons.
Bulkley, Dunton & Co., Deutschland, ——, 1,750 bls. wood pulp, 355 tons.
E. J. Keller Co., Inc., Deutschland, ——, 510 bls. wood pulp, 78 tons.
Scandinavian Pulp Agency, Inc., Hjelmaren, Gothenburg, 3,048 bls. kraft pulp.
Johanson, Wales & Sparre, Inc., Hjelmaren, Gothenburg, 897 bls. dry soda pulp.
E. M. Sergeant & Co., Hjelmaren, Gothenburg, 599 bls. dry soda pulp.
E. M. Sergeant & Co., Hjelmaren, Gothenburg, 175 bls. sulphite pulp.
International Accep. Bank, Hjelmaren, Gothenburg, 125 bls. sulphite pulp.
Polaris Shipping Co., C. Gerhard, Sonora, 893 cords wood pulp.

WOOD FLOUR

State Chemical Co., Gaasterdyk, Rotterdam, 420 bags.
A. Kramer & Co., Volendam, Rotterdam, 500 bags.

(Continued on page 66)

BOLTON QUALITY

JOHN W. BOLTON & SONS, INC.

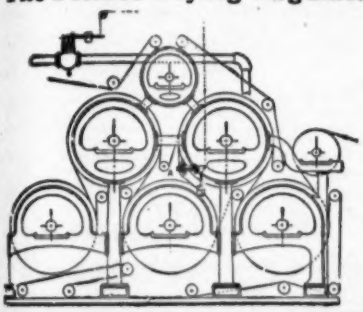
EAGLE KNIFE & BAR WORKS

Lawrence, Mass.

The only firm making KNIVES for every machine from wood pile to finishing room.

It's the KNIVES that do the work!

The Pickles Drying Regulator



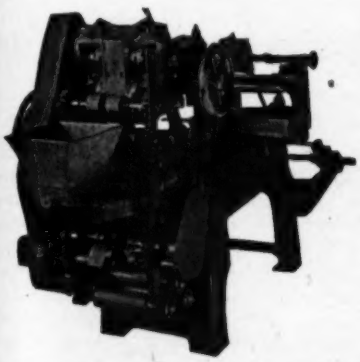
WE ARE SAFE IN OUR PROPOSITION

YOU'LL MAKE NO MISTAKE IN ACCEPTING IT

Pickles Drying Regulator

will do everything we claim for it and more. The test costs you nothing until you are satisfied. Many mills tried one and now have every machine equipped. Write for list of users and other information.

W. F. PICKLES **Buckland, Conn.**



HIGHEST SPEED

Paper Bag Machinery

Get My Quotations Before Placing Your Orders

Special Machinery Designed and Built

A. L. PARRISH

1702 Robinson St., South Bend, Ind.

Cotton and Paper Rolls
Super Calenders
Friction Calenders
Embossing Calenders
Hydraulic Presses and Pumps

Successors to the Granger Foundry & Machine Co.

The Textile-Finishing Machinery Company

PROVIDENCE, R. I.

Imports of Paper and Paper Stock

(*Continued from page 64*)

The Burnet Co., Mercer, Rotterdam, 1,000 bags, 50,000 ks.
The Burnet Co., Hjelmaren, Gothenburg, 358 bags.

WOOD PULP WADDING

Birn & Wachenheim, Gaasterdyk, Rotterdam, 50 bls.
Bendix Paper Co., Gaasterdyk, Rotterdam, 60 bls.
Birn & Wachenheim, Volendam, Rotterdam, 50 bls.

PHILADELPHIA IMPORTS

WEEK ENDING OCTOBER 27, 1928

W. Schall & Co., Exporter, Marseilles, 162 bls. rags.
Philadelphia National Bank, Exporter, Marseilles, 170 bls. rags.
Guaranty Trust Co., Exporter, Marseilles, 45 bls. rags.
J. A. Steer & Co., Bristol City, Bristol, 74 coils old rope.
Union Clay Mines Corp., Bristol City, Bristol, 20 bags china clay.
C. T. Wilson & Co., Inc., Bristol City, Bristol, 240 bags china clay.
Castle & Overton, Inc., Mercer, Rotterdam, 170 bls. bagging.
Scandinavian Pulp Agency, Inc., Hjelmaren, Gothenburg, 1,270 bls. kraft pulp.
Scandinavian Pulp Agency, Inc., Hjelmaren, Gothenburg, 254 bls. sulphite pulp.
M. Gottesman & Co., Inc., Hjelmaren, Gothenburg, 625 bls. sulphite pulp.
J. Andersen & Co., Hjelmaren, Gothenburg, 250 bls. sulphite pulp.
E. M. Sergeant & Co., Hjelmaren, Gothenburg, 200 bls. sulphite pulp.
The Borregaard Co., Inc., Hjelmaren, Gothenburg, 125 bls. wood pulp.
Castle & Overton, Inc., Waukegan, Havre, 335 bls. rags.
Dry & Co., Waukegan, Havre, 207 bls. rags.
D. I. Murphy, Waukegan, Havre, 808 bls. rags.
V. Galaup, Waukegan, Havre, 59 bls. rags.
G. W. Millar & Co., Waukegan, Havre, 45 bls. rags.
Katzenstein & Keene, Inc., Waukegan, Havre, 160 bls. rags.
J. H. Whitwell, Waukegan, Havre, 1 cs. wall paper.
J. Milton Hagy Waste Works, Waukegan, Dunkirk, 98 bls. rags.
Castle & Overton, Inc., Waukegan, Dunkirk, 187 bls. rags.
G. W. Millar & Co., Waukegan, Dunkirk, 272 bls. rags.
J. A. Steer & Co., Waukegan, Dunkirk, 224 bls. rags.
Salomon Bros. & Co., Waukegan, Dunkirk, 247 bls. rags.
Katzenstein & Keene, Inc., Waukegan, Dunkirk, 43 bls. rags.
Castle & Overton, Inc., Coahoma County, Antwerp, 889 bls. rags.
Fidelity Trust Co., Coahoma County, Antwerp, 222 bls. rags.
J. A. Steer & Co., Coahoma County, Antwerp, 188 bls. rags.
Salomon Bros. & Co., Coahoma County, Antwerp, 77 bls. thread waste.
G. W. Millar & Co., Coahoma County, Antwerp, 47 bls. rags.
MacBlaine & Co., Coahoma County, Antwerp, 43 bls. rags.
F. J. Fawcett, Coahoma County, Antwerp, 35 bls. flax waste.
D. I. Murphy, Coahoma County, Antwerp, 81 bls. rags.
M. Friedman & Co., Coahoma County, Antwerp, 89 bls. rags.
E. J. Keller Co., Inc., Coahoma County, ——, 155 bls. flax waste.
E. J. Keller Co., Inc., Havre Maru, ——, 250 bls. rags.
E. J. Keller Co., Inc., Hannover, ——, 212 bls. rags.
E. J. Keller Co., Inc., Ontario, ——, 237 bls. rags.
Castle & Overton, Inc., Hannover, Germany, 113 bls. rags.

BOSTON IMPORTS

WEEK ENDING OCTOBER 27, 1928

T. M. Duche & Sons, Corsican Prince, Buenos Aires, 417 bags casein, 25,020 ks.
Guaranty Trust Co., Tagliamento, Naples, 46 bls. rags.
Interstate Trust Co., Tagliamento, Naples, 82 bls. rags.
Bulkley, Dunton & Co., Mercer, ——, 190 bls. wood pulp, 38 tons.
1st National Bank of Boston, Mercer, Rotterdam, 400 bags casein, 20,000 ks.
Green Hamilton & Co., Mercer, Rotterdam, 106 bls. rags.
Chemical National Bank, Mercer, Rotterdam, 213 bls. rags.
C. H. Powell & Co., Mercer, Rotterdam, 200 rolls straw board.
M. Gottesman & Co., Inc., Burma, Sebenico, 1,600 bls. wood pulp.
J. Andersen & Co., Burma, Trieste, 390 bls. wood pulp.
Scandinavian Pulp Agency, Inc., Hjelmaren, Gothenburg, 5,003 bls. kraft pulp.
Scandinavian Pulp Agency, Inc., Hjelmaren, Gothenburg, 2,692 bls. sulphite pulp.
Scandinavian Pulp Agency, Inc., Hjelmaren, Gothenburg, 51 bls. sulphate pulp.
O. E. Kiaer, Hjelmaren, Gothenburg, 1,500 bls. wood pulp.
Guaranty Trust Co., Hjelmaren, Gothenburg, 96 rolls news print.
Price & Pierce, Ltd., Hjelmaren, Gothenburg, 375 bls. wood pulp.
Johanson, Wales & Sparre, Inc., Hjelmaren, Gothenburg, 245 bls. sulphate pulp.
F. S. Webster, Laconia, Liverpool, 11 cs. paper.
Bird & Son, Coahoma County, Antwerp, 71 bls. rags.
Kidder Peabody Accep. Corp., Coahoma County, Antwerp, 56 bls. rags.
G. W. Millar & Co., Coahoma County, Antwerp, 176 bls. rags.
Meredith Linen Mills, Coahoma County, Antwerp, 147 bls. flax waste.
Spaulding Fibre Co., Coahoma County, Antwerp, 433 bls. flax waste.
Bank of Commerce & Trust Co., Coahoma County, Antwerp, 146 bls. rags.
H. Fawcett, Coahoma County, Antwerp, 76 bls. flax waste.
Brown Bros. & Co., Coahoma County, Antwerp, 75 bls. cotton waste.
National Shawmut Bank, Coahoma County, Antwerp, 46 bls. rags.
Robert Blank, Havre Maru, Osaka, 200 bls. rags.
Castle & Overton, Inc., Anaconda, Holland, 90 bls. rags.

BALTIMORE IMPORTS

WEEK ENDING OCTOBER 27, 1928

Castle & Overton, Inc., Liberty, France, 170 bls. rags.

NORFOLK IMPORTS

WEEK ENDING OCTOBER 27, 1928

Castle & Overton, Inc., Hannover, Germany, 52 bls. rags.

Eastern Pulpwood Situation Unsatisfactory

Ralph P. Bell, of Halifax, N. S., one of the vice-presidents of the Canadian Pulpwood Association, who was in Toronto recently, says that he cannot see prospects of any change in the pulpwood situation in the near future, but thinks, however, that within two or three years the residents of Nova Scotia will see a much keener demand from American mills for wood and very much higher prices. In the course of a conversation, Mr. Bell said it seemed that a factor, which had presented itself to him as well as to others and had prevented the scarcity of wood and the higher prices so confidently predicted a year ago, was the removal of farmers' wood by motor truck in Maine and in many parts of Canada. A few years ago no one thought of moving pulpwood any great distance by truck and today it was not an uncommon sight to see it move twenty or twenty-five miles by such means and, as a consequence, hundreds of thousands of cords, heretofore inaccessible to driving streams, had suddenly become available by this new method of transportation. Mr. Bell stated that in 1920 it looked as if wood prices would never come down and as if there was going to be a permanent shortage. Today the picture is exactly the reverse. It appeared as if there would be a perpetual over-production and as if one could never get more than "wages" out of the pulpwood business. "Yes," added Mr. Bell, "if my theory has anything at all to do with it, a new source of supply, thus made available, cannot, of course, last forever, and there is a period—just how far away one cannot tell—but I have guessed from three to five years, when these areas of pulpwood having been exhausted we will again be faced with apparent scarcity of wood and prices will again go up."

Huge Power Project

Another huge power project, involving a cost of anywhere between $25,000,000 and $50,000,000, is declared to have been mooted by the Maclaren interests. This has to do with the establishment of a power plant on the Lievre River at High Falls, 22 miles from Buckingham, Que. The entire course of the river, stretching from High Falls to the doors of Mont Laurier, 108 miles farther north, will be affected by the project. The plan is to raise the falls from the present 75 feet to 135 feet. This will involve the disappearance of whole villages and much low-lying farmland, and it will be necessary to make at least 1,000 expropriations of property in the area to be flooded. Authority to do this will be sought, it is said, in formal proceedings to be inaugurated in the Superior Court of Quebec and before the Quebec Public Utilities Commission prior to January 1 next.

Swedish Chemical Pulp Quoted Lower

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., October 31, 1928.—There were a few decreases in prices quoted on chemical pulps on the Swedish market during the second half of September, according to a report from Consul General John Ball Osborne, at Stockholm. Quotations as of October 2 are given as follows: Bleached sulphite, $3.28 to $3.64; easy bleaching sulphite, $2.37 to $2.43; strong sulphite, $2.13 to $2.25; strong sulphate, $2.19 to $2.25. Mechanical pulp continues to be quoted at $24 to 28 per short ton for dry and $10 to $11 per ton for wet pulp. All prices refer to first quality pulp and f.o.b. Swedish port.

For reliable running and average long life

LINDSAY FOURDRINIER WIRES

are unsurpassed

We make them for the largest and fastest machines.

Cylinder Wires All Sizes

The Lindsay Wire Weaving Co.

Collinwood Sta. CLEVELAND, OHIO

Nor can you get what you pay for in belting unless you join it properly with Crescent Belt Fasteners. Further, the loss is not only in belting, but also in production, labor and time, and eats its way right into the heart of your investment in hangers, pulleys and shafting, etc.

WHY TRY TO HATCH CHICKS FROM DOOR KNOBS?

It can't be done!

Better stop these leaks right now—send for Service Data on Crescent Belt Fasteners.

CRESCENT BELT FASTENERS

CRESCENT BELT FASTENER CO.
247 Park Avenue, New York City

Prompt deliveries made from stocks in
NEW YORK
BOSTON
PHILADELPHIA
CHICAGO

TRADE MARK

Clear the decks for good business

Business has passed the summer doldrums . . . active times are ahead. Experienced executives, in planning production, are paying attention to dyestuffs.

Heller & Merz Colors meet modern production requirements. They are quality dyestuffs which justify the confidence placed in them by leading manufacturers.

Heller & Merz service, second to none, has stood the test 60 years. Ask any of our customers!

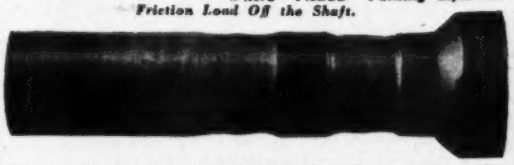
The HELLER & MERZ COMPANY
505 Hudson St., New York

Boston 287 Atlantic Ave. | Chicago 146 W. Kinzie St. | Philadelphia 114 Market St.

Springfield, Mass. 24 Lester Street

Factory—NEWARK, N. J.

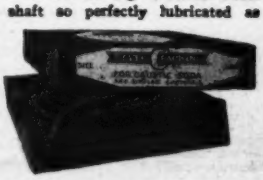
Where "PALCO" Packing Lifts the Friction Load Off the Shaft.



Photograph of a Centrifugal Pump Shaft badly worn by working against flax packing which did not carry sufficient lubricant to prevent friction.

STYLE C PACKING

For pumps handling caustic soda and similar chemicals. Its lubricant can be relied upon to resist the cutting action of these chemicals, and to keep the pump shaft so perfectly lubricated as to avoid friction. To prove our claims let us send you a free working sample to test under your own conditions.



GREENE, TWEED & CO.
Sole Manufacturers
109 Duane St., New York

Paper Mill Stocks and Bonds

Quoted by Taylor & White, 45 Wall street, New York City, to whom all inquiry for quotations on these or any other Securities is referred.

BONDS	BID	ASKED
Abitibi Power & Paper 5s, 1943	90	91
Abitibi Power & Paper 6s, serially to 1934	100	102
American Writing Paper 6s, 1947	81	87
Bastrop Pulp & Paper 6½s, 1940	103	105½
Bedford Pulp & Paper 6½s, 1942	97	100
Belgo-Canadian Paper 6s, 1943	100	103
British-Columbia Pulp & Paper 6s, 1950	89	92
Brown Paper Mills Serial 6s, 1941	97	100
Brown Company 5½s, 1946	98	101
Bryant Paper 6s, 1942	98	101½
Canadian Paper Board 7s, 19337	97	99½
Cape Breton Pulp & Paper 6s, 1932	103	...
Celotex Company 6s, 1929	95	99
Celotex Company 6½s, 1939	100	102
Celotex Company of Chicago, Debenture 6s, 1936	95	98
Central Paper Company Serial 6½s, 1942	86	89
Central Paper 7s, 1934	78	...
Champion Coated Paper Serial 6½s, 1934	100	...
Champion Coated Fibre Notes 6s, 1941	100	102
Champion Fibre Notes 6s, 1941	100	102
Champion Fibre Notes 8s, 1930	95	...
Champion Paper Corp. 6s, 1945	95	98
Container Corp. of America Debenture 6s, 1936, ex-warrants	101	104
Continental Paper Products 6½s, 1943	90	99
Cornell Wood Products 7½s, 1937	103	...
Crown Willamette 6s, 1951	101	102
Dells Paper & Pulp Serial 6s, 1938	95	98
Dixon Board Mills Serial 6s, 1942	80	...
Donnaconna Paper 5½s, 1948	93	...
Eastern Manufacturing Co. 7s, 1938	97	100
Escanaba Paper Serial 6s, 1939	98	100
Escanaba Paper 6½s, 1935	96	99
Filer Fibre Serial 7s, 1935	90	95
Fort Irange Paper 7s, 1942	101	...
Fort William Paper 6s, 1946	100	104
Fraser Company 6s, 1950	103	105
Hammermill Paper Serial 6s, 1939	100	...
Hawley Pulp & Lumber 6s, 1946	96	...
Hawthorne Paper Company 6s, 1937	80	...
Hoberg Paper & Fibre 7s, 1937	94	97
Industrial Fibre Corp. Debenture 8s, 1933	100	...
International Paper 6s, 1955	102	103
International Paper 5s, 1947	98	100
Itasca Paper & Prairie River Power Serial 5½s, 1938	99½	...
Itasca Paper & Prairie River Power Serial 6s, 1938	99	...
Jessup & Moore First 6s, 1945	83	90
Kalamazoo Vegetable Parchment 6s, 1938	99	101
Lake Superior Paper 6s, 1941	105	108
Marathon Paper Mills Serial 5½s, 1942	99	101
Marinette & Menominee 7½s, 1936	103	105
Mead Pulp & Paper 5% Notes Serially, 1937	95	100
Mead Fibre 7s, 1937	97	101
Minnesota Ontario Paper Serial 6s, 1945	97½	100
Murray Bay Paper Serial 6½s, 1947	102	105
Munissing Paper Serial 6s, 1936	98	...
Nekoosa Edwards Paper 6s, 1928-42	96	...
Ontario Pulp & Paper 6s, 1931	108½	110½
Orono Pulp & Paper 6s, 1943	99	...
Orono Pulp & Paper 5s, 1941	96½	...
Oswego Falls Corp. 6s, 1941	99	102
Parker-Young Company 6½s, 1944	98	100
Paterson Parchment Paper 6s, 1938	101	103
Penobscot Chemical Fibre 6s, 1942	102	105
Port Alfred Pulp & Paper 5½s, 1947	98	100
Price Brothers 6s, 1943	105	...
Provincial Paper 5½s, 1947	98½	...
Queen City Paper 7s, 1933	98	...
River Raisin Paper 6s, 1936	98	100
Riordan Pulp & Paper 6s, 1942	102	104
Rolland Paper 6s, 1937	99	101
St. Croix Paper Serial 5s, 1937	99	...
St. Helen Pulp & Paper 6½s, 1931	99	102
St. Maurice Valley Corp. 6s, 1945	101	104
St. Maurice Valley Corp. 5½s, 1947	98½	100½
St. Regis Paper of Canada 6s,, 1931	100	101½
St. Regis Paper of Canada 6½s, 1934	100	102
Smith (Howard) Paper Mills 7s, 1941	104	106
Spanish River Pulp & Paper 6s, 1931	108	110
Stevens-Thompson Paper 6s, 1942	94	96
Taggart Brothers 6s, 1944	95	100
Tait Paper & Color Industries 6s, 1934	88	92
Ticonderoga Pulp & Paper 5s, 1930	94	...
Ticonderoga Pulp & Paper 6s, 1940	100	102
Tomahawk Kraft Paper 6s, 1938	98	...
Tomahawk Pulp Paper 7s, 1932	99	...
Tonawanda Paper 5½s, Series 1941	99	102
Union Bag & Paper Power 6s, 1932	98	100
United Wall Paper Factories 6s, 1947	96	99
Warren (S. D.) Company 6s, 1945	103	105
Watab Paper 6½s, 1942	102	...
Waterway Paper Products 6s, 1931	100	101½
Wayagamack Pulp & Paper 6s, 1951	103	105
Westfield River Paper Serial 7s, 1943	89	93
Whitmer-Parson Pulp & Lumber 8s, 1938	20	25
Whitaker Paper 7s, 1942	108	110

STOCKS	BID	ASKED
American Box Board, Pfd.	9¼	10¼
American Box Board, Com.	9¼	10¼
Am. Tissue Mills, 7% Pfd.	90	93
British Columbia P. & P. Pfd.	65	75
Brompton Pulp & Paper, 8% Pfd.	100	...
Champion Fibre, 7% Pfd.	108	110
Diem & Wing, 7% Pfd.	92	97
Eastern Mfg. Co. 1st Pfd.	55	...
Great Northern Paper, Com.	75	78
Hammermill Paper, new 6% Pfd.	100	...
Hinde & Dauch, Com.	125	None Off.
Hinde & Dauch, 6% Pfd.	102	None Off.
Holyoke Card & Paper	160	None Off.
Marathon Paper Mills, Com.	150	...
Mengel Co., Pfd.	102	104
Midwest Box Co., 8% Pfd.	98	102
Midwest Box Co., 6% Pfd.	95	99
Louis De Jonge Co., 7% Pfd.	94	97
Oxford Papers, Com.	195	...
Oxford Paper Co., Pfd.	108	111
Penobscot Chemical Fibre, Com.	80	...
Richardson Co., Com.	170	...
Sabin Robbins Paper Co., 8% Pfd.	105	110
St. Croix Paper	155	...
St. Regis Paper Co., 7% Cum. Pfd.	105	108
Westfield River Paper Co., 1st Pfd.	Wanted	None Off.
West Virginia Pulp and Paper Company	55	57
West Virginia Pulp and Paper, Pfd.	100	103
Whittaker Paper, 7% Cum. Pfd.	105	None Off.

News of the Boston Paper Trade

BOSTON, Mass., October 29, 1928.—The third mailing in the Bristol campaign of Carter, Rice & Co. Corporation is under way. A folder of Boston Index for cards of record is being distributed largely by salesmen. The outside front cover shows an exclamation point, with the upper part in gold, diagonally across the page and the "dot," about two inches in diameter, an open circle, surrounded with a thin line of gilt disclosing beneath samples of colors attached to the folder on the inside, in cherry, ecru, blue, canary, salmon, green, and buff. The white is also shown.

The Bigger and Better Campaign of the Old Colony Envelope Company to promote the sale of their ready-to-print mailing sets by offering a series of electros sold at cost for use on mailing pieces is being furthered by Carter, Rice & Co. Corporation. The concern is now sending out the first piece, illustrative of the present political campaign, desirable for a customer wishing to use an "election tie-up." A return card is enclosed with this piece which offers to send the 1928 portfolio of Christmas designs suitable for use on announcements. All are moderuistic and attractive designs adaptable to making up business greeting cards.

The Carter, Rice & Co. Corporation has added a half-tone line to its stock, made by the Crocker-McElwain Letter Company. The paper is made especially for illustrated letter purposes. On it can be printed half-tone or color work. The paper is also suitable for type-writer or multigraph and has an advantage over coated bond paper in that it will not crack when folded. The Carter, Rice Company has a complete line of this paper in stock, together with the most popular sizes of envelopes to match.

A meeting of the Fine Paper Division of the New England Paper Merchants' Association is to be held at the Chamber of Commerce on Wednesday.

Charles J. Judkins, until recently representative in New England of Pinco Papers, Inc., of Camden, N. J., has resigned to embark in the paper jobbing business in this city. Mr. Judkins was at one time with the University Paper Box Company, Cambridge, maker of boxes for H. D. Foss & Co., confectioners, who took over that concern. Previous to his connection with Pinco Papers, Inc., Mr. Judkins was superintendent of the plant of Walter S. Barnes & Son, paper box manufacturers, Boston.

F. B. Oldham, president of the Latrobe Paperboard Co., Latrobe, Pa., called on the trade last week.

Max Zimmerman, who is in charge of the manufacturing of the United Paperboard Company, was at the Boston office last week.

A. Millard Daniels, treasurer of the L. L. Brown Paper Company, Adams, Mass., is a member of the committee on industries in the Hoover-for-President movement in Massachusetts.

New Catalog on Thermix Stacks

An attractive new catalog on Thermix Stacks for mechanical draft has just been issued. This catalog contains about 20 illustrations of installations, shows many typical layouts of this form of induced draft and gives a curve so that the exact size of stack can be chosen from the catalog for given conditions and sizes of boilers, etc.

The Prat-Daniel Corporation, 185 Madison Avenue, New York, will send a free copy of this catalog to any readers who wish to write for it.

BROWN COMPANY'S ALPHA GRADES

of Purified Cellulose Fibre representing some of the valuable results of our many years of research in cellulose chemistry.

SUPER ALPHA

for strength in Tear, Fold and Mullen. Super Alpha equals the higher grades of rags in the manufacture of fine papers.

EASY-BEATING ALPHA

This is a grade developed for mills of limited beating capacity. While not giving results equal to Super Alpha, it produces wonderful paper on short beating.

REGULAR ALPHA

This is a grade midway between Super and Easy-Beating.

Use ALPHA for Quality

BROWN COMPANY B FOUNDED 1892 Portland, Maine

The Babcock & Wilcox Co.

85 LIBERTY STREET, NEW YORK

ESTABLISHED 1868

THE BABCOCK & WILCOX COMPANY STEAM

Water Tube Boilers Steam Superheaters
Economizers Air Preheaters
Chain Grate Stokers Oil Burners
Refractories
Seamless Tube and Piping

BRANCH OFFICES

ATLANTA	Candler Building
BOSTON	80 Federal Street
CHICAGO	Marquette Building
CINCINNATI	Traction Building
CLEVELAND	Guardian Building
DALLAS, TEXAS	Magnolia Building
DENVER	444 Seventeenth Street
DETROIT	Ford Building
HOUSTON, TEXAS	Electric Building
LOS ANGELES	Central Building
NEW ORLEANS	344 Camp Street
PHILADELPHIA	Packard Building
PHOENIX, ARIZ.	Heard Building
PITTSBURGH	Farmers Deposit Bank Building
PORTLAND, ORE.	Failing Building
SALT LAKE CITY	Kearns Building
SAN FRANCISCO	Sheldon Building
SEATTLE	L. C. Smith Building
HONOLULU, T. H.	Castle & Cooke Building
HAVANA, CUBA	Calle de Aguiar 104
SAN JUAN, P. R.	Recinto Sur 51

"Good strong *selling* points"

are what your salesmen like! They get plenty of them when they sell Paprus Dishes! For these dishes hold their shape like wood—yet sell for less than other dishes. They are made in one piece from moulded pulp. No folds—no staples—no holes for leakage—absolutely waterproof. Write for price list.

Paprus Dishes used as covered container

PAPRUS DISHES

KEYES FIBRE COMPANY, INC.

General Sales Offices: GRAYBAR BLDG., NEW YORK

Factory: Waterville, Maine. JOHN M. HART COMPANY, *Manager of Sales*

CD ENGINEERS

Power plants—additions—complete paper mill projects

ONE great organization—a specialist in paper mill engineering and construction—designs, builds, rebuilds, reports, appraises, for many of the most important concerns in the paper industry. Plans, price, construction work, delivery date, owner's satisfaction, all guaranteed.

Ferguson customers include:

Hinde & Dauch Co.	Spencer-Wynne Paper Products Company
A. P. W. Paper Co.	Bennington Wax Paper Company
Mead Pulp and Paper Co.	Oswego Falls Corp.
Chillicothe Paper Co.	Fairfield Paper Co.
Warren Mfg. Co.	

THE H. K. FERGUSON COMPANY

Hanna Bldg. • Cleveland, Ohio • Phone: CHerry 8078

New York • Detroit • Birmingham • Tokio, Japan

Ferguson ENGINEERS

New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, October 31, 1928.

Conditions in the local paper market are satisfactory for the time of the year. Demand for most of the various grades is quite active and supplies are moving into consumption in good volume. Prices are holding up very well and shading is infrequent. Sales forces of the leading paper houses are still making strenuous efforts to book as many orders as possible before the end of the year.

News print production is gradually increasing and contract shipments are going forward at an excellent pace. However, while the demand is expanding, the position of the market is very uncertain. Most of the mills are offering concessions on orders booked for the forthcoming year and with competition for business very keen, a satisfactory agreement between the leading organizations is apparently far off.

Demand for paper board is fairly persistent. Box board is moving in good volume. Prices remain generally steady. The different varieties of fine papers are in satisfactory request with quotations holding to schedule. The coarse paper market is exhibiting a strong undertone and wrapping paper is still going forward in heavy volume. Prices are practically unchanged.

Mechanical Pulp

No radical changes were recorded in the ground wood market during the past week. Offerings of both imported and domestic mechanical pulp are about sufficient to take care of the prevailing demand. Contract withdrawals are going forward in a normal manner. Prices are generally holding to schedule and there is little talk of concessions around.

Chemical Pulp

The chemical pulp market is in a sound position. Demand for the various grades is fairly active and most producers are well sold ahead on contract. Both imported and domestic bleached sulphite are still exceptionally strong, offerings being decidedly limited. Quotations are holding to former levels without difficulty and shading is infrequent.

Old Rope and Bagging

Business in the old rope market is moderately active. The paper mills are evincing some interest in domestic and foreign manila rope. Prices remain unaltered, in most instances. The tone of the bagging market is unchanged. Scrap bagging is only in light request and roofing bagging is moving rather slowly for the season. Prices remain fairly steady.

Rags

During the past week the rag market has been rather spotty. Demand for domestic cotton cuttings has been mostly along routine lines. Roofing grades are not as strong as usual at this time of the year. The foreign rag market remains rather quiet. Quotations on the various grades of domestic and imported rags are generally holding to previously reported levels.

Waste Paper

The paper stock market continues to exhibit strength. Book stock is in unusually heavy demand at present, at firm quotations. Hard white and soft white shavings are going forward in good volume. The various grades of waste paper used in the board mills are still in excellent request. Old kraft machine compressed bales are moving in a normal manner. Prices of the various grades of paper stock remain steady.

Twine

Trading in the twine market was fairly satisfactory during the past week. With wrapping paper moving in the usual seasonal manner, the demand for the various grades of twine continues persistent. Some good orders should be booked before the end of the year. Prices are holding to previously quoted levels.

Swenson Evaporator Co. Appointments

H. D. Grant was recently made chief engineer of the Swenson Evaporator Company, a subsidiary of the Whiting Corporation, Harvey, Ill., well-known manufacturers of evaporators, continuous crystallizers and special chemical equipment.

Mr. Grant graduated from the University of Michigan as a chemical engineer in 1921 and has since been engaged in chemical engineering, especially the design and operation of Heat Transfer Equipment. With his experience and training he is particularly well fitted for the duties of his new position.

K. A. Forrest, formerly superintendent of the Camas, Wash, mill of the Crown Willamette Paper Company and consulting engineer assisting in the design and construction of special equipment for their new projects, has been appointed manager of the pulp and paper mill equipment division of the Swenson Evaporator Company.

Mr. Forrest will be located at the main office, Harvey, Ill, where he will direct his efforts toward the design and development of Mount equipment and other apparatus pertaining to pulp mill operations.

Mr. Forrest is a graduate engineer and has had considerable experience along engineering lines in connection with the design and operation of sulphate pulp mills.

St. Regis Buys Wood Pulp Terminal

[FROM OUR REGULAR CORRESPONDENT]

CAPE VINCENT, N. Y., October 22, 1928.—Announcement was made this week that the St. Regis Paper Company has purchased the old pulp wood terminal here which was formerly owned by the International Paper Company. The price paid for the property was not made known.

The property is a valuable one and includes about six acres of land located within the village limits and all terminal buildings including equipment for handling pulp wood. The facilities include a trestle and a concrete dock, the dock extending into water deep enough to permit large boats to unload. The St. Regis Company does not plan to utilize the property at once but it is expected that within the next two years the terminal will be overhauled and put in condition for use.

The St. Regis Company at the present time operates a large terminal at Waddington where pulp wood is unloaded for the mills at Norfolk, Norwood and Raymondville. Most of the pulp wood used by the St. Regis mills comes from Canada where the company owns large timber tracts. The operation of the local terminal just acquired would bring pulp wood shipments much closer to the Northern New York mills of the St. Regis Paper Company and affiliated concerns.

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A NEW PULP—

Screens 80 to 100 Tons Ground Wood per Day

Consistency—Screened Stock 0.8% to 1% Air-Dry

Requires only 25 to 30 Horse Power

Employs Only One-Half Usual Number of Deckers

Entirely Self-Cleaning

No Showers, No Thinning Water, No Wash Water.

A Pulp Screen Which is a Worthy Companion to The Trimbey Automatic Consistency Regulator and The Trimbey and Tibbitts Proportioning and Metering System

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Glens Falls, N. Y.

Made in Canada? Yes.

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A good bond

Your regular furnish and "S" Brand silicate make a good bond paper. Many mills have proved that Mullen test can be increased and the finish greatly improved by the use of 5% of "S" Brand in the beaters. Quality bond papers are made with "S" Brand. Try it and be convinced. Send for full particulars and instructions.

Philadelphia Quartz Co.

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MONTREAL LONDON PARIS BERLIN STOCKHOLM

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Patented

FIDALGO DRYING SYSTEMS

(Not Connected With Any Pulp Mfg. Co.)

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SHAFFER BOX COMPANY, TACOMA, WASHINGTON

MR. L. A. DeGUERRE, ENGINEER

50 TONS DAILY

BOGALUSA PAPER COMPANY, BOGALUSA, LA.

MR. R. H. LAFTMAN, GENERAL MANAGER

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50 TONS DAILY

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Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, October 31, 1928.

BLANC FIXE.—Trading in the blanc fixe market was fairly active during the past week. Contract shipments were well up to average. The pulp is still quoted at from $42.50 to $45.00 per ton, in bulk, while the powder is selling at from 3½ cents to 3⅝ cents a pound, in barrels, at works.

BLEACHING POWDER.—Producers of bleaching powder have announced that the contract quotations which have ruled during the current year would be continued for 1929. Demand for this product has improved of late. Bleaching powder is quoted at from $2.00 to $2.35 per 100 pounds, in large drums, at works.

CASEIN.—Demand for casein was fairly active during the week. Prices were practically unchanged from previous levels. Domestic casein is quoted at from 15½ cents to 17 cents per pound, while imported casein is selling at from 16 cents to 16½ cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—Manufacturers of caustic soda have announced that there will be no change in the contract prices for the forthcoming year. Solid caustic soda is quoted at from $2.90 to $2.95, while the flake and the ground are selling at from $3.30 to $3.35 per 100 pounds, in large drums, at works.

CHINA CLAY.—Contract withdrawals of china clay are going forward in satisfactory volume. Prices remain steady. Imported china clay is quoted at from $15 to $25 per ton, ship side. Domestic paper making clay is selling at from $8 to $9 per ton and pulverized at from $10 to $12 per ton, at mine.

CHLORINE.—Producers of chlorine have announced a reduction of half a cent per pound on all contracts booked for the forthcoming year. Chlorine is now quoted at 3 cents per pound, in tanks, or multi-unit cars, at works, on contract orders, and at 4½ cents per pound, in cylinders, car lots, at works.

ROSIN.—The tone of the rosin market has improved. At the naval stores, the grades of gum rosin used in the paper mills are now quoted at from $9.35 to $9.40 per 280 pounds, ex dock, in barrels. Wood rosin is selling at from $7.15 to $7.95 per 280 pounds, in barrels, at southern shipping points.

SALT CAKE.—Steadiness prevails in the salt cake market. Production has been maintained in sufficient volume to take care of current requirements. Prices remain unchanged. Salt cake is quoted at from $15 to $17 per ton, while chrome salt cake is selling at from $14 to $15 per ton, in bulk, at works.

SODA ASH.—It has been announced that contract quotations on soda ash for the forthcoming year will not be changed from the current level. Contract quotations on soda ash, in car lots, at works, per 100 pounds, according to grade, are still as follows: in bags, $1.32½, and in barrels, $1.55.

STARCH.—Business in the starch market was moderately active during the week. Supplies continue to move into consumption in normal volume for the season. Prices remain unchanged. Special paper making starch is quoted at $4.07 per 100 pounds, in bags, and at $4.24 per 100 pounds, in barrels.

SULPHATE OF ALUMINA.—Demand for sulphate of alumina is persistent and the market is exhibiting a strong undertone. Prices remain unchanged. Commercial grades of sulphate of alumina are quoted at from $1.40 to $1.55 and iron free at from $1.90 to $2.05 per 100 pounds, in bags, at works.

SULPHUR.—The sulphur market is in a sound position. Contract shipments are proceeding in good volume and inquiries for future business are numerous. Prices are steady. Sulphur is selling at from $18 to $19 per ton, in bulk, at mine, on contract orders. The spot quotation is $20 per ton.

TALC.—Most of the business transacted in the talc market during the past week was along routine lines. Prices are practically unaltered. Domestic talc is quoted at from $16 to $18 per ton, at eastern mines. Imported talc is selling at from $18 to $20 per ton, ship side.

Market Quotations

Paper

(F. o. b. Mill)

Ledgers	11.00	@38.00
Bonds	9.00	@45.00
Writings—		
Extra Superfine	14.00	@32.00
Superfine	14.00	@32.00
Tub sized	10.00	@15.00
Engine sized	8.00	@11.00
News—		
Rolls, contract	3.25	@ —
Rolls, transient	3.25	@ 3.50
Sheets	3.65	@ 3.85
Side Runs	3.00	@ 3.75
Book, Cased—		
S. & S. C.	6.35	@ 7.75
M. F.	6.25	@ 7.75
Coated and Enamel	8.00	@15.00
Lithograph	8.00	@15.00
Tissues—Per Ream—		
White No. 1	.75	@ 1.00
Anti-Tarnish	1.35	@ 1.90
Colored	1.00	@ 2.00
White No. 2	.70	@ .80
Kraft	.90	@ 1.00
Manila	.70	@ .80
Kraft—		
No. 1 Domestic	6.25	@ 6.50
No. 2 Domestic	4.50	@ 4.75
Southern	4.25	@ 4.50
Imported	6.50	@ 7.00
Manila—		
No. 1 Jute	9.00	@ 9.25
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.75	@ 5.25
No. 2 Wood	4.00	@ 4.50
Butchers	3.75	@ 4.25
Fibre Papers—		
No. 1 Fibre	5.00	@ 5.50
No. 2 Fibre	4.75	@ 5.25
Common Bogus	2.75	@ 3.00
Screenings	3.00	@ 3.25
Card Middles	4.00	@ 5.00
Glassine—		
Bleached, basis 25 lbs.	13.00	@16.00
Bleached, basis 20 lbs.	15.00	@16.00

(Delivered New York)

Boards—per ton—		
News	45.00	@47.50
Straw	52.50	@55.00
Chip	42.50	@45.00
Binders' Boards	65.00	@67.50
Sgl. Mla. Ll. Chip	50.35	@52.90
Wood Pulp	80.00	@85.00
Container	55.00	@62.50
85 Test Jute Liner	55.00	@57.50

Mechanical Pulp

(Ex-Dock)

No. 1 Imported—		
Moist	28.00	@31.25
Dry	32.00	@34.00

(F. o. b. Mill)

No. 1 Domestic	26.00	@29.00
Screenings	15.00	@20.00

Chemical Pulp

(Ex-Dock, Atlantic Ports)

Sulphite (Imported)—		
Bleached	3.65	@ 4.40
Easy Bleaching	2.80	@ 2.90
No. 1 strong unbleached	2.50	@ 2.70
Mitscherlich unbleached	2.65	@ 3.25
No. 2 strong unbleached	2.40	@ 2.60
No. 1 Kraft	2.50	@ 2.75
No. 2 Kraft	2.40	@ 2.50
Sulphate—		
Bleached	3.75	@ 3.85

(F. o. b. Pulp Mill)

Sulphite (Domestic)—		
Bleached	3.40	@ 4.75
Easy Bleaching Sulphite	2.60	@ 2.75
News Sulphite	2.40	@ 2.65
Mitscherlich	3.00	@ 3.70
Kraft (Domestic)	2.50	@ 3.30
Soda Bleached	3.15	@ 3.30
Sulphate Screenings—		
Coarse	.75	@ .85
Refined	1.50	@ 1.65

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—		
New White, No. 1	11.00	@11.50
New White, No. 2	8.00	@ 8.50
Silesias No. 1	7.25	@ 7.75
New Unbleached	10.50	@11.00
Washables	4.25	@ 4.75
Fancy	5.50	@ 6.00
Blue Overall	6.75	@ 7.25
New Blue Prints	5.25	@ 5.50
New Soft Blacks	5.25	@ 5.75
Mixed Khaki Cuttings	4.75	@ 5.25
Pink Corset Cuttings	8.00	@ 8.50
O. D. Khaki Cuttings	5.25	@ 5.75
Men's Corduroy	3.75	@ 4.25
New Mixed Blacks	3.50	@ 3.75

Old Rags

White, No. 1—		
Repacked	5.50	@ 6.00
Miscellaneous	4.50	@ 5.00
White, No. 2—		
Repacked	3.00	@ 3.50
Miscellaneous	2.50	@ 2.75
St. Soiled, White	2.00	@ 2.15
Thirds and Blues—		
Repacked	2.25	@ 2.50
Miscellaneous	1.75	@ 2.00
Black Stockings	3.25	@ 3.75
Roofing Rags—		
Cloth Strippings	1.70	@ 1.80
No. 1	1.70	@ 1.80
No. 2	1.55	@ 1.65
No. 3	1.30	@ 1.40
No. 4	1.25	@ 1.35
No. 5A	.95	@ 1.05

Foreign Rags

New Dark Cuttings	2.50	@ 2.60
New Mixed Cuttings	2.75	@ 3.25
New Light Silesias	7.00	@ 7.50
Light Flannelettes	7.50	@ 8.00
Unbleached Cottons	10.00	@11.00
New White Cuttings	10.50	@11.50
New Light Oxfords	7.00	@ 7.50
New Light Prints	5.50	@ 6.50
No. 1 White Linens	7.25	@ 8.00
No. 2 White Linens	5.50	@ 6.25
No. 3 White Linens	4.50	@ 5.00
No. 4 White Linens	3.00	@ 3.50
Old Extra Light Prints	2.75	@ 3.25
Ord. Light Prints	2.25	@ 2.50
Med. Light Prints	1.90	@ 2.10
Dutch Blue Cottons	2.25	@ 2.50
German Blue Linens	2.50	@ 2.75
German Blue Cottons	2.00	@ 2.25
Checks and Blues	1.75	@ 1.90
Lindsay Garments	1.85	@ 1.90
Dark Cottons	1.65	@ 1.75
Old Shopperies	1.55	@ 1.65
New Shopperies	1.50	@ 1.60
French Blues	2.10	@ 2.25

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—		
Foreign	1.60	@ 1.70
Domestic	1.70	@ 1.75
Wool Tares, light	1.60	@ 1.65
Wool Tares, heavy	1.60	@ 1.65
Bright Bagging	1.60	@ 1.65
Small Mixed Rope	1.25	@ 1.40
Manila Rope—		
Foreign	3.35	@ 3.65
Domestic	3.25	@ 4.00
New Burlap Cut	2.75	@ 3.00
Hessian Jute Threads—		
Foreign	3.50	@ 4.00
Domestic	3.25	@ 3.50

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, white, No. 1	3.25	@ 3.50
Hard, white, No. 2	2.40	@ 2.55
Soft, White, No. 1	2.55	@ 2.65
White envelope cuttings	3.25	@ 3.50
Flat Stock—		
Stitchless	1.60	@ 1.70
Overissue Mag.	1.60	@ 1.70
Solid Flat Book	1.45	@ 1.55
Crumpled No. 1	1.05	@ 1.15
Solid Book Ledger	2.00	@ 2.10
Ledger Stock	1.60	@ 1.75
Manilas—		
New B. B. Chips	.65	@ .75
New Env. Cut	2.40	@ 2.60
New Cuttings	1.60	@ 1.85
Extra No. 1 old	1.25	@ 1.35
Print	.80	@ .85
Container	.72½	@ .77½
Bogus Wrapper	.75	@ .85
Old Kraft Machine Compressed bales	1.85	@ 1.95
News—		
No. 1 White News	1.75	@ 1.80
Strictly Overissue	.85	@ .95
Strictly Folded	.75	@ .85
No. 1 Mixed Paper	.60	@ .65
Common Paper	.35	@ .40

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COATING CLAY
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ST. REGIS PAPER COMPANY

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Saturating

is guaranteed to give you the best finish, biggest production, least trouble and most satisfaction of any equipment on the market today.

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THE BIGGS BOILER WORKS CO.
AKRON, 20, OHIO

Twines

(F. o. b. Mill)

Cotton—			
No. 1	.39	@	.40
No. 2	.37	@	.38
No. 3	.36	@	.37
B. C., 18 basis	.38	@	.40
A. B. Italian, 18 basis	.48	@	.53
Finished Jute—			
Dark 18 basis	.24	@	.25
Light 18 basis	.27	@	.28
Jute Wrapping, 3-6 Ply—			
No. 1	.19	@	.21
No. 2	.18	@	.20
Tube Rope—			
4-ply and larger	.16	@	.17
Fine Tube Yarn—			
5-ply and larger	.21	@	.25
4-ply	.25	@	.29
3-ply	.28	@	.32
Unfinished India—			
Basis	.13	@	.14
Paper Makers Twine Balls	.11	@	.12
Box Twine, 2-3 ply	.15	@	.17
Jute Rope	.17	@	.19
Ameri. Hemp, 6	.29	@	.31
Sisal Hay Rope—			
No. 1 Basis	.16	@	.18
No. 2 Basis	.14	@	.16
Sisal Lath Yarn—			
No. 1	.14	@	.16
No. 2	.12	@	.14
Manila Rope	.22	@	.24

CHICAGO

All Rag Bond	.35	@	.41
No. 1 Rag Bond	.25	@	.35
No. 2 Rag Bond	.14	@	.25
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	.06¾	@	.11
Superfine writing	.18	@	.24
No. 1 fine writing	.14	@	.18
No. 2 fine writing	.12	@	.14
No. 3 fine writing	.08½	@	.12
No. 1 M. F. Book	.06½	@	.07¾
No. 2 M. F. Book	.05¾	@	.06¾
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07½	@	.12
Coated Label	.07½	@	.10
News—Roll, mill	.03½	@	.04¾
News—Sheets, mill	.03¾	@	.04¾
No. 1 Manila	.04¼	@	.05¾
No. 1 Fibre	.04¾	@	.05½
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.04	@	.04½
No. 1 Kraft	.06¼	@	.06½
Southern Kraft	.03¾	@	.04
No. 2 Kraft	.04	@	.04¾
Wood Pulp Boards	.04¼	@	.06¼
Sulphite Screenings	.03	@	.03¾
Manila Tissue—			
24x36 Sheet	.07	@	.07¾
White Tissue—			
20x30 Sheet	.07¼	@	.07½
Boards, per ton— (Delivered Central Territory)			
Plain Chip	37.50	@	41.00
Solid News	47.50	@	—
Manila Lined Chip	55.00	@	—
Container Lined— (Delivered Central Territory)			
85 Test	65.00	@	70.00
100 Test	70.00	@	—

Old Papers

(F. o. b. Chicago)

Shavings—			
No. 1 Hard White	2.80	@	2.90
White Env. Cuttings	2.90	@	3.00
No. 1 Soft Shavings	2.50	@	2.60
No. 1 Mixed	1.00	@	1.05
No. 2 Mixed	.90	@	1.00
Ledger & Writings	1.55	@	1.65
Solid Books	1.25	@	1.35
Blanks	1.70	@	1.80
Krafts	1.90	@	2.00
New Kraft Cuts	2.25	@	2.35
Manila Envelope Cuttings	2.00	@	2.10
Ex. No. 1 Manila	1.55	@	1.65
Print Manila	.90	@	1.00
Folded News (overissue)	.65	@	.75
Old Newspapers—			
No. 1	.65	@	.75
No. 2	.60	@	.65
Mixed Papers—			
No. 1	.70	@	.80
Roofing Stocks— (F. o. b. Chicago, net cash)			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper

(F. o. b. Mill)

Bonds	.07	@	.40
Ledgers	.11	@	.40
Writings—			
Superfine	.13	@	.18
Extra fine	—	@	.22
Fine	.20	@	.26½
Fine, No. 2	.16	@	.25
Fine, No. 3	.12	@	.20
Book, M. F.	.06	@	.07
Book, S. S. & C.	.06	@	.07½
Book, Coated	.11	@	.16
Coated Lithograph	.09	@	.12
Labe	.09	@	.12
News	.03¾	@	.04
No. 1 Jute Manila	.08½	@	.09
Manil Sul., No. 1	.04½	@	.06
Manil No. 2	.04	@	.04½
No. 2 Kraft	.05½	@	.06½
No. 1 Kraft	.06½	@	.07
Common Bogus	.02¾	@	—
Straw Board	52.50	@	75.00
News Board	45.00	@	—
Chip Board	42.50	@	—
Wood Pulp Board	4.50	@	5.00
(Carload Lots)			
Binder Boards—			
No. 1, per ton	80.00		
No. 2, per ton	75.00		
Carload lots	60.00	@	70.00
Tarred Felts—			
Regular	53.00	@	55.00
Slaters (per roll)	84	@	.94
Best Tarred, 1-ply (per roll)	1.85	@	1.95
Best Tarred, 2-ply (per roll)	1.44	@	1.54
Best Tarred, 3-ply	1.93	@	2.08

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.10½	@	.11
New White, No. 2	.07	@	.07½
Light Silesias	.07	@	.07½
Silesias, No. 1	.07½	@	.08
Black Silesia, soft	.05	@	.05½
New Unbleached	.10¼	@	.11
Washable, No. 1	.04½	@	.05
Washable, No. 2	.03	@	.03½
Fancy	.05½	@	.06
Cottons—according to grades—			
Blue Overall	.07½	@	.08
New Blue	—	@	.04
New Black Soft	.05	@	.05¾
New Light Seconds	.02½	@	.03
New Dark Seconds	1.85	@	2.00
Khaki Cuttings—			
No. 1 O. D.	.05½	@	.05¾
No. 2 Mixed	.04½	@	.04¾
Corduroy	.03	@	.03½
New Canvas	.08½	@	.09
New Black Mixed	.03¾	@	.04½

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.65	@	1.80
Domestic	1.75	@	2.00
Manila Rope	3.50	@	4.00
Sisal Rope	1.50	@	—
Mixed Rope	1.10	@	1.25
Scrap Burlaps—			
No. 1	1.50	@	1.60
No. 2	1.15	@	1.25
Wool Tares, heavy	3.00	@	—
Mixed Strings	1.15	@	1.25
No. 1, New Light Burlap	2.50	@	2.75
New Burlap Cuttings	2.00	@	2.25

Old Papers

(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	3.20	@	3.25
No. 2 Hard White	2.75	@	3.00
No. 1 Soft White	2.50	@	2.60
No. 2 Soft White	1.90	@	2.00
No. 1 Mixed	1.50	@	1.60
No. 2 Mixed	.90	@	1.00
Solid Ledger Stock	1.60	@	1.65
Writing Paper	1.50	@	1.60
No. 1 Books, heavy	1.50	@	1.60
No. 2 Books, light	1.20	@	1.25
No. 1 New Manila	2.40	@	2.50
No. 1 Old Manila	1.50	@	1.60
Print Manila	.95	@	1.00
Container Manila	.85	@	.90
Old Kraft	2.25	@	2.30
Common Paper	.55	@	.60
No. 1 Mixed Paper	.55	@	.60
Straw Board, Chip	.65	@	.75
Binders Board, Chip	.65	@	.75
Overissue News	.90	@	.95
Old Newspaper	.60	@	.65

Domestic Rags (Old)

White, No. 1—			
Repacked	4.25	@	4.50
Miscellaneous	3.50	@	3.75
Thirds and Blues—			
Repacked	2.00	@	2.25
Miscellaneous	1.60	@	1.80
Black Stockings (Export)	3.90	@	4.25
Roofing Stock—			
Foreign No. 1	1.70	@	1.85
Repacked	.02¾	@	.03
No. 2	1.40	@	1.50
No. 3 (Roofing)	1.15	@	1.25
No. 4	1.25	@	—
No. 5A	.85	@	.90
B	.80	@	.85
C	.70	@	.80

BOSTON

Paper

(F. o. b. Mill)

Ledgers—			
Sulphite	.07½	@	.15
Rag content	.15	@	.30
All rag	.38	@	.52½
Bonds—			
Sulphite	.06½	@	.11½
Rag content	.15	@	.30
All rag	.36½	@	.65
Writings	.07	@	.20
Superfines	.11	@	.31
News	.03½	@	.04
Book, Super	.06	@	.09
Book, M. F.	.05¾	@	.08½
Book, Coated	.08½	@	.20
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06½
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.05½	@	.06½
No. 2 Kraft	.04	@	.04¾
Common Bogus	.02	@	.02¾
Delivered New England points			
Straw Boards, rolls .009	52.50		
Straw Board in Sheets, basis 35s to 70s	54.50	@	55.00
Filled News Board	45.00		
Chip Board	42.50		
Single Manila Pulp Lined Board	52.50	@	57.50
Single White, Patent Coated Newsboard Bender	70.00	@	80.00
Wood Pulp Board	80.00	@	85.00
Binder Boards	70.00	@	75.00
(F. o. b. Mill)			
Tarred Felts—			
Regular, carload lots	65.00	@	—

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Hard White	3.25	@	3.75
No. 2 Hard White	2.60	@	2.90
No. 1 Soft White	2.50	@	2.60
No. 1 Mixed	1.10	@	1.15
No. 2 Mixed	.85	@	.90
Solid Ledger Stock	2.35	@	2.45
No. 1 Books, Heavy	1.45	@	1.55
No. 1 Books, Light	—	@	1.15
Manila Env. Cuttings	2.00	@	2.25
No. 1 Old Manila	1.20	@	1.25
White Blank News	1.70	@	1.75
Old Kraft	2.00	@	2.10
Print Manila	.80	@	.90
No. 1 Mixed Paper	.60	@	.65
Overissue News	.70	@	.75
Old Newspapers	.75	@	.80
Box Board, Chip	.65	@	—

Bagging

(Price f. o. b. Boston)

Gunny No. 1—			
Foreign	—	@	1.60
Manila Rope—			
Foreign	3.25	@	3.50
Domestic	3.25	@	3.50
Mixed Strings	.90	@	1.00
Scrap Burlaps	1.45	@	1.50
Scrap Sisal	1.25	@	1.30
Scrap Sisal for shredding	1.60	@	1.70
Wool Tares, heavy	—	@	1.50
New Burlap Cutting	1.90	@	2.00

Domestic Rags (New)

(Price f. o. b. Boston)

Shirt Cuttings—			
New White No. 1	.09	@	.10
Silesias, No. 1	.06	@	.06½
New Unbleached	.09½	@	.10
Fancy	.04	@	.04½
Washable	.04	@	.04½
Cottons—According to grades			
Blue Overalls	.06	@	.06½
New Black, soft	.04	@	.04½
Khaki Cuttings	.04	@	.04¾
Corduroy	.03	@	.03½
New Canvas	.08	@	.08¾

Domestic Rags (Old)

(Price f. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	4.75	@	5.25
Miscellaneous	5.00	@	—
White No. 2—			
Repacked	.04½	@	.05
Miscellaneous	.03½	@	.04
Twos and Blues	—	@	2.90
Thirds and Blues—			
Repacked	2.00	@	2.15
Miscellaneous	1.75	@	1.90
Roofing Stock—			
No. 1	1.75	@	1.85
No. 2	1.45	@	1.55
No. 3	1.05	@	1.10
No. 4	1.10	@	1.15

Foreign Rags

(F. o. b. Boston)

Dark Cottons	1.60	@	1.65
New No. 1 Shirt Cuttings	9.00	@	10.00
Dutch Blues	2.00	@	2.12½
Lace Curtains	5.50	@	—
New Checks & Blues	4.50	@	4.60
Old Fustians	1.90	@	—

TORONTO

Paper

(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.12½	@	—
No. 2 Sulphite	.10¾	@	—
No. 1 Colored	.13½	@	—
No. 2 Colored	.11¾	@	—
Ledgers (sulphite)	—	@	—
Ledgers, No. 1	.36	@	—
Ledgers, No. 2	.27	@	—
Writing	.09½	@	.10
News f. o. b. Mills—			
Rolls (carloads)	3.25	@	—
Sheets (carloads)	3.75	@	—
Sheets (2 tons or over)	4.00	@	—
Book—			
No. 1 M. F. (carloads)	7.50	@	—
No. 2 M. F. (carloads)	7.25	@	—
No. 3 M. F. (carloads)	7.00	@	—
No. 1 S. C. (carloads)	8.00	@	—
No. 2 S. C. (carloads)	7.75	@	—
No. 3 S. C. (carloads)	7.50	@	—
No. 1 Coated and Litho	14.50	@	—
No. 2 Coated and Litho	13.50	@	—
No. 3 Coated and Litho	12.75	@	—
Coated tinted	.15	@	—
Wrapping—			
Rag Brown	4.95	@	—
White Wrap	5.25	@	—
"B" Manila	5.80	@	—
No. 1 Manila	6.65	@	—
Fiber	6.65	@	—
Kraft, M. F.	7.00	@	—
M. G.	7.00	@	—

Pulp

(F. o. b. Mill)

Ground Wood	30.00	@	31.00
Sulphite easy bleaching	62.00	@	—
Sulphite news grade	62.00	@	—
Sulphite, bleached	75.00	@	—
Sulphate	65.00	@	—

Old Waste Paper

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	3.00	@	—
Soft White Book Shavings	2.85	@	—
White Blk. News	1.60	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.40	@	—
Light and Crumpled Book Stock	1.25	@	—
Ledgers and Writings	1.50	@	—
Solid Ledgers	1.50	@	—
Manilas—			
New Manila Cut	1.50	@	—
Printed Manilas	1.00	@	—
Kraft	2.25	@	—
News and Scrap—			
Strictly Overissue	.80	@	—
Strictly Folded	.80	@	—
No. 1 Mixed Paper	.70	@	—

Domestic Rags

(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.11½	@	—
Fancy Shirt Cuttings	.05½	@	—

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PAPER TRADE JOURNAL

ESTABLISHED 1872

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

FIFTY-SEVENTH YEAR

Published Every Thursday by the

LOCKWOOD TRADE JOURNAL CO., Inc.

GEO. S. MACDONALD, President — J. K. LASSER, Secretary

Executive and Editorial Offices, 10 East 39th Street, New York
Chicago Office: 123 West Madison St

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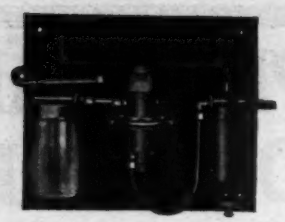

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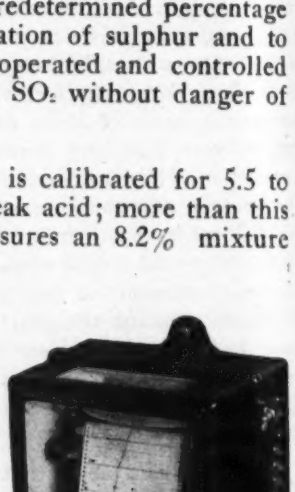

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